STIC Search Report
EIC 1700

STIC Database Tracking Number: 130300

TO: John Chu
Location: REM 9D51
Art Unit : 1752
February 28, 2006

Case Serial Number: 10/849197

From: Usha Shrestha
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-3519
usha.shrestha@uspto.gov

Search Notes

STIC Search Results Feedback Form

USPTO

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact*:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art* ***found****, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art* ***not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

180300

Banks, Kendra

From: JOHN CHU [john.chu@uspto.gov]
Sent: Wednesday, February 22, 2006 8:28 PM
To: STIC-EIC1700
Subject: Database Search Request, Serial Number: 10849197

Requester:
JOHN CHU (P/1752)
Art Unit:
GROUP ART UNIT 1752
Employee Number:
68314
Office Location:
REM 09D51
Phone Number:
(571)272-1329
Mailbox Number:

Case serial number:
10849197
Class / Subclass(es):
430/270.1
Earliest Priority Filing Date:
5/21/03
Format preferred for results:
Paper
Search Topic Information:
Please search the compound of formula (1) alone and in a photoresist composition.

Thank you very much,
John
Special Instructions and Other Comments:

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

Bib Data Sheet

CONFIRMATION NO. 7290

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/849,197	05/20/2004 RULE	430	1752	0171-1098PUS1

APPLICANTS

Takeru Watanabe, Niigata-ken, JAPAN;

Takeshi Kinsho, Niigata-ken, JAPAN;
Koji Hasegawa, Niigata-ken, JAPAN;

** CONTINUING DATA **********
None

** FOREIGN APPLICATIONS **********
JAPAN 2003-142853 05/21/2003

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 09/24/2004

Foreign Priority claimed	STATE OR	SHEETS	TOTAL	INDEPENDENT
☑ yes ☐ no	COUNTRY	DRAWING	CLAIMS	CLAIMS
35 USC 119 (a-d) conditions met ☑ yes ☐ no ☐ Met after Allowance	JAPAN	0	13	8
Verified and Acknowledged Examiner's Signature Initials				

ADDRESS
02292
BIRCH STEWART KOLASCH & BIRCH
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FALLS CHURCH , VA
22040-0747

TITLE
Basic compound, resist composition and patterning process

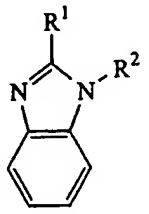
FILING FEE	FEES: Authority has been given in Paper	☐ All Fees
RECEIVED 1200	No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue)

ABSTRACT

Resist compositions comprising basic compounds having a benzimidazole skeleton and a polar functional group have an excellent resolution and an excellent focus margin and are useful in microfabrication using electron beams or deep-UV light.

AMENDED SET OF CLAIMS

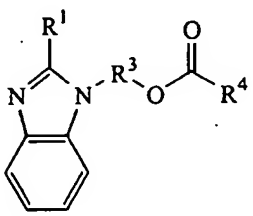
1. (Original) A resist composition comprising at least one basic compound having a benzimidazole skeleton and a polar functional group, represented by the general formula (1):



(1)

wherein R^1 is a hydrogen atom, a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, an aryl group of 6 to 10 carbon atoms, or an aralkyl group of 7 to 10 carbon atoms; and R^2 is a polar functional group-bearing straight, branched or cyclic alkyl group of 1 to 20 carbon atoms wherein said alkyl group contains as the polar functional group at least one group selected from among ester, acetal and cyano groups, and optionally at least one group selected from among hydroxyl, carbonyl, ether, sulfide and carbonate groups.

2. (Original) A resist composition comprising at least one basic compound having a benzimidazole skeleton and a polar functional group, represented by the general formulae (2) to (7):



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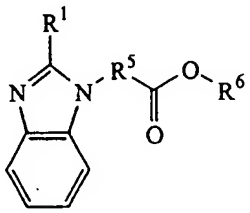

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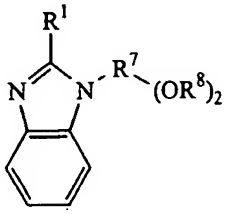
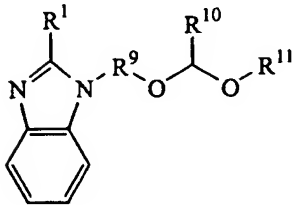
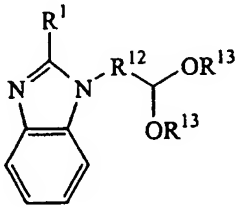


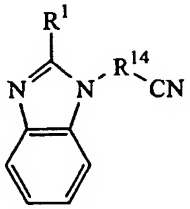
(4)



(5)



(6)



(7)

wherein R^1 is a hydrogen atom, a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, an aryl group of 6 to 10 carbon atoms, or an aralkyl group of 7 to 10 carbon atoms;

R^3, R^5, R^9, R^{12} and R^{14} are each independently a straight, branched or cyclic alkylene group of 1 to 10 carbon atoms;

R^4 is a hydrogen atom or an alkyl group of 1 to 15 carbon atoms which may contain at least one group selected from among hydroxyl, carbonyl, ester, ether, sulfide, carbonate, cyano and acetal groups;

R^6 is an alkyl group of 1 to 15 carbon atoms which may contain at least one group selected from among hydroxyl, carbonyl, ester, ether, sulfide, carbonate, cyano and acetal groups;

R^7 is a trivalent, straight, branched or cyclic hydrocarbon group of 2 to 10 carbon atoms;

R^8 is each independently an acyl group of 1 to 10 carbon atoms which may contain at least one ester or ether group, or two R^8 may bond together to form a cyclic carbonate or cyclic acetal;

R^{10} is a hydrogen atom or a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms;

R^{11} is a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms which may contain at least one group selected from among ether, sulfide and acetal groups, or R^{10} and R^{11} may bond together to form a ring;

R^{13} is a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, or two R^{13} may bond together to form a ring.

3. (Original) A positive-working resist composition comprising:

(A) the basic compound of claim 1;

(B) an organic solvent;

(C) a base resin having an acid labile group-protected acidic functional group which is alkali-insoluble or substantially alkali-insoluble, but becomes alkali-soluble when the acid labile group is eliminated; and

(D) a photoacid generator.

4. (Original) The positive resist composition of claim 3 which further comprises (E) a dissolution inhibitor.

5. (Original) A negative-working resist composition comprising:

(A) the basic compound of claim 1;

(B) an organic solvent;

(C') a base resin which is alkali-soluble, but becomes substantially alkali-insoluble when crosslinked with a crosslinking agent;

(D) a photoacid generator; and

(F) a crosslinking agent which induces crosslinkage under the action of an acid.

6. (Withdrawn) A patterning process comprising the steps of:

(1) applying the positive resist composition of claim 3 onto a substrate;

(2) heat treating the applied resist, then exposing the heat-treated resist through a photomask to high-energy radiation having a wavelength of at most 300 nm or an electron beam; and

(3) heat treating the exposed resist, then developing the resist with a liquid developer.

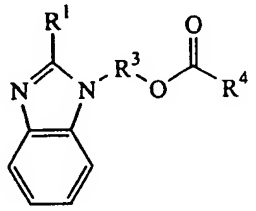
7. (Withdrawn) A patterning process comprising the steps of:

(1) applying the negative resist composition of claim 5 onto a substrate;

(2) heat treating the applied resist, then exposing the heat-treated resist through a photomask to high-energy radiation having a wavelength of at most 300 nm or an electron beam; and

(3) heat treating the exposed resist, then developing the resist with a liquid developer.

8. (Withdrawn) A basic compound represented by the general formula (2):



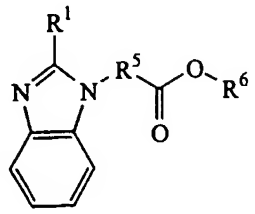
(2)

wherein R^1 is a hydrogen atom, a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, an aryl group of 6 to 10 carbon atoms, or an aralkyl group of 7 to 10 carbon atoms;

R^3 is a straight, branched or cyclic alkylene group of 1 to 10 carbon atoms; and

R^4 is a hydrogen atom or an alkyl group of 1 to 15 carbon atoms which may contain at least one group selected from among hydroxyl, carbonyl, ester, ether, sulfide, carbonate, cyano and acetal groups.

9. (Withdrawn) A basic compound represented by the general formula (3):



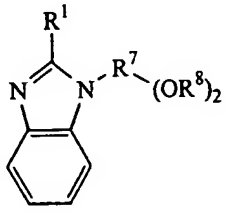
(3)

wherein R^1 is a hydrogen atom, a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, an aryl group of 6 to 10 carbon atoms, or an aralkyl group of 7 to 10 carbon atoms;

R^5 is a straight, branched or cyclic alkylene group of 1 to 10 carbon atoms; and

R^6 is an alkyl group of 1 to 15 carbon atoms which may contain at least one group selected from among hydroxyl, carbonyl, ester, ether, sulfide, carbonate, cyano and acetal groups.

10. (Withdrawn) A basic compound represented by the general formula (4):



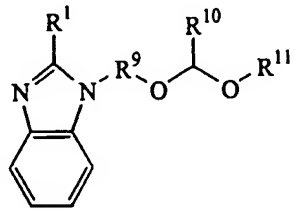
(4)

wherein R^1 is a hydrogen atom, a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, an aryl group of 6 to 10 carbon atoms, or an aralkyl group of 7 to 10 carbon atoms;

R^7 is a trivalent, straight, branched or cyclic hydrocarbon group of 2 to 10 carbon atoms; and

R^8 is each independently an acyl group of 1 to 10 carbon atoms which may contain at least one ester or ether group, or two R^8 may bond together to form a cyclic carbonate or cyclic acetal.

11. (Withdrawn) A basic compound represented by the general formula (5):



(5)

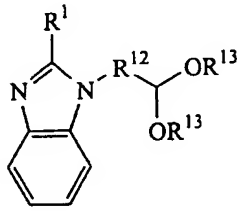
wherein R^1 is a hydrogen atom, a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, an aryl group of 6 to 10 carbon atoms, or an aralkyl group of 7 to 10 carbon atoms;

R^9 is a straight, branched or cyclic alkylene group of 1 to 10 carbon atoms;

R^{10} is a hydrogen atom or a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms;

R^{11} is a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms which may contain at least one group selected from among ether, sulfide and acetal groups, or R^{10} and R^{11} may bond together to form a ring.

12. (Withdrawn) A basic compound represented by the general formula (6):



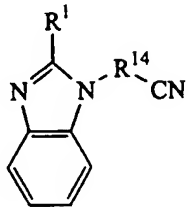
(6)

wherein R^1 is a hydrogen atom, a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, an aryl group of 6 to 10 carbon atoms, or an aralkyl group of 7 to 10 carbon atoms;

R^{12} is a straight, branched or cyclic alkylene group of 1 to 10 carbon atoms; and

R^{13} is a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, or two R^{13} may bond together to form a ring.

13. (Withdrawn) A basic compound represented by the general formula (7):

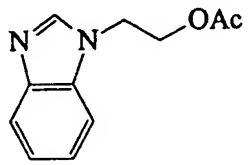


(7)

wherein R^1 is a hydrogen atom, a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, an aryl group of 6 to 10 carbon atoms, or an aralkyl group of 7 to 10 carbon atoms; and

R^{14} is a straight, branched or cyclic alkylene group of 1 to 10 carbon atoms.

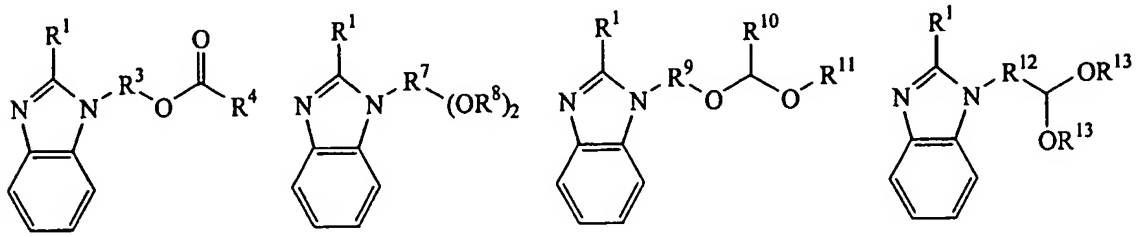
14. (Currently Amended) A compound of the formula:



Amine 2

15. (Withdrawn) A resist composition comprising the compound of claim 14.

16. (New) The resist composition of claim 1 wherein the basic compound is at least one selected from the group consisting of compounds represented by the following general formulae:



(2) (4) (5) (6)

wherein R^1 is a hydrogen atom, methyl group or phenyl group;

R^3, R^9, and R^{12} are each independently a straight, branched or cyclic alkylene group of 1 to 10 carbon atoms;

R^4 is a hydrogen atom or an alkyl group of 1 to 15 carbon atoms which may contain at least one group selected from among hydroxyl, carbonyl, ester, ether, sulfide, carbonate, cyano and acetal groups;

R^7 is a trivalent, straight, branched or cyclic hydrocarbon group of 2 to 10 carbon atoms;

R^8 is each independently an acyl group of 1 to 10 carbon atoms which may contain at least one ester or ether group, or two R^8 may bond together to form a cyclic carbonate or cyclic acetal;

R^{10} is a hydrogen atom or a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms;

R^{11} is a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms which may contain at least one group selected from among ether, sulfide and acetal groups, or R^{10} and R^{11} may bond together to form a ring; and

R^{13} is a straight, branched or cyclic alkyl group of 1 to 10 carbon atoms, or two R^{13} may bond together to form a ring.

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=> d his

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L6         2290 SEA FILE=REGISTRY SUB=L5 SSS FUL L4
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L12           1 S US20050008968/PN
L13         924 S L6
L14        1426 S L10
L15          35 S L13 AND ?RESIST?
L16          52 S L14 AND ?RESIST?
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L17          21 S L16 AND PHOTOG?/SC,SX
L18          10 S L15 AND PHOTOG?/SC,SX
L19          25 S L15 NOT L18
L20          23 S L13 AND PHOTOG?/SC,SX
L21          23 S L18 OR L20
L22           1 S L21 AND L11
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L24          48 S L17 OR L23
L25           1 S L24 AND L12


=> d que l24
L7              STR
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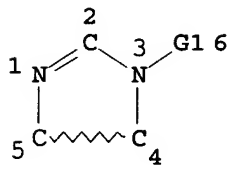


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DEFAULT ECLEVEL IS LIMITED
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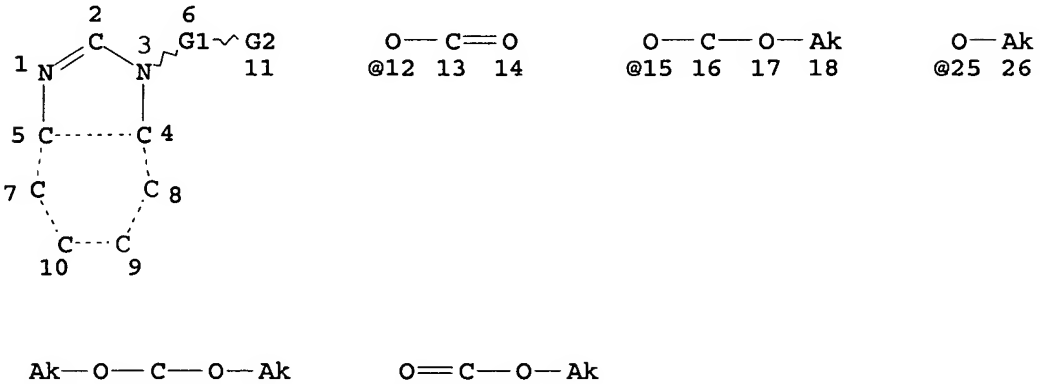
STEREO ATTRIBUTES: NONE
L8 STR



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DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 29

STEREO ATTRIBUTES: NONE
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L23 48 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 AND PHOTOG?/SC,SX

L24 48 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 OR L23

=> fil hcap
FILE 'HCAPLUS' ENTERED AT 09:56:43 ON 28 FEB 2006

=> d l24 1-48 ibib abs hitstr hitind

L24 ANSWER 1 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1314040 HCAPLUS
DOCUMENT NUMBER: 144:47761
TITLE: Luminescent compounds having a functionalized linker arm used in the bioconjugation and labelling of biomolecules
INVENTOR(S): Caputo, Giuseppe; Gobetto, Roberto; Viscardi, Guido

PATENT ASSIGNEE(S): Italy
SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005119254	A1	20051215	WO 2005-IB51782	2005 0601

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

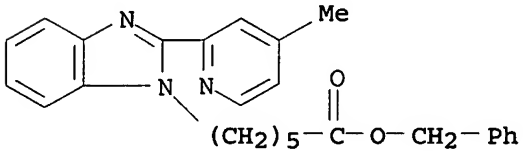
PRIORITY APPLN. INFO.: IT 2004-TO372 A 2004 0601

AB The present invention relates to luminescent compds. having a functionalized linker arm, their synthesis and use in bioconjugation and labeling of biomols., such as for example nucleosides, nucleotides, nucleic acids (DNA, RNA or PNA) and proteins, as well as their use in the execution of in vitro and in vivo analytic and diagnostic assays.

IT **871031-12-8P**
(luminescent compds. having a functionalized linker arm and electrochemiluminescent properties used in bioconjugation and labeling of biomols.)

RN 871031-12-8 HCAPLUS

CN 1H-Benzimidazole-1-hexanoic acid, 2-(4-methyl-2-pyridinyl)-, phenylmethyl ester (9CI) (CA INDEX NAME)



IC ICM G01N033-53
ICS C07F015-00

CC 9-16 (Biochemical Methods)
Section cross-reference(s): 29, **41**

IT 15746-57-3P 64819-73-4P 64819-74-5P 78277-26-6P **871031-12-8P** 871031-13-9P 871031-14-0P 871031-15-1P 871031-16-2P

(luminescent compds. having a functionalized linker arm and electrochemiluminescent properties used in bioconjugation and labeling of biomols.)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

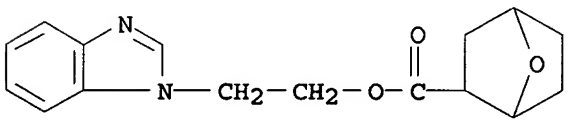
L24 ANSWER 2 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1155389 HCAPLUS
DOCUMENT NUMBER: 143:413518
TITLE: Nitrogen-containing organic compound, chemically amplified **resist** composition and patterning process
INVENTOR(S): Watanabe, Takeru; Hasegawa, Koji; Takemura, Katsuya; Noda, Kazumi
PATENT ASSIGNEE(S): Shin-Etsu Chemical Co., Ltd., Japan
SOURCE: U.S. Pat. Appl. Publ., 23 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005238993	A1	20051027	US 2005-110927	2005 0421
JP 2005306812	A2	20051104	JP 2004-128478	2004 0423

PRIORITY APPLN. INFO.: JP 2004-128478 A 2004 0423

AB Chemical amplified **photoresist** compns. comprising nitrogen-containing organic compds. having a 7-oxanorbornane-2-carboxylic ester structure have an excellent resolution and provide a precise pattern profile and are useful in microfabrication using electron beams or deep-UV light.

IT **867257-56-5P**
(nitrogen-containing organic compound for chemical amplified **resist** composition)
RN 867257-56-5 HCAPLUS
CN 7-Oxabicyclo[2.2.1]heptane-2-carboxylic acid, 2-(1H-benzimidazol-1-yl)ethyl ester (9CI) (CA INDEX NAME)



IC ICM G03C001-492
INCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
ST nitrogen org compd chem amplified **photoresist** compn

patterning process
IT Photolithography
Photoresists
(nitrogen-containing organic compound for chemical amplified **resist** composition and patterning process)
IT 867257-46-3P 867257-47-4P 867257-49-6P 867257-51-0P
867257-52-1P 867257-54-3P
(nitrogen-containing organic compound for chemical amplified **resist** composition)
IT 111-95-5P 867257-45-2P 867257-48-5P 867257-50-9P
867257-53-2P 867257-55-4P **867257-56-5P** 867257-57-6P
867257-59-8P
(nitrogen-containing organic compound for chemical amplified **resist** composition)
IT 102-71-6, Triethanolamine, reactions 102-79-4,
Butyldiethanolamine 105-59-9, Methyldiethanolamine 109-85-3,
2-Methoxyethylamine 120-07-0, Phenyldiethanolamine 122-20-3,
Triisopropanolamine 122-96-3, 1,4-(Bis(2-hydroxyethyl)piperazine
622-40-2, 2-Morpholinoethanol 1615-14-1, 1H-Imidazole-1-ethanol
3040-44-6, 2-Piperidinoethanol 3445-11-2, 2-(2-Oxo-1-
pyrrolidinyl)ethanol 6340-03-0, 1H-Benzimidazole-1-ethanol
17209-72-2 21987-32-6 64897-90-1 867257-43-0
(proparation of nitrogen-containing organic compound for chemical amplified **resist** composition)
IT 79402-97-4P
(proparation of nitrogen-containing organic compound for chemical amplified **resist** composition)
IT 867257-44-1P
(proparation of nitrogen-containing organic compound for chemical amplified **resist** composition)

L24 ANSWER 3 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:429276 HCAPLUS
DOCUMENT NUMBER: 142:490393
TITLE: Nitrogen-containing organic compound, **resist** composition and patterning process
INVENTOR(S): Watanabe, Takeru; Kinsho, Takeshi; Hasegawa, Koji; Takemura, Katsuya; Noda, Kazumi; Kobayashi, Katsuhiro
PATENT ASSIGNEE(S): Shin-Etsu Chemical Co., Ltd., Japan
SOURCE: U.S. Pat. Appl. Publ., 31 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

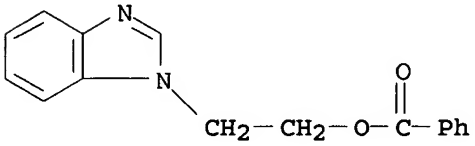
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005106500	A1	20050519	US 2004-984933	2004 1110
JP 2005165295	A2	20050623	JP 2004-324619	2004 1109
PRIORITY APPLN. INFO.:			JP 2003-384505 A	2003 1114

AB Chemical amplified **resist** compns. comprising nitrogen-containing organic compds. having an aromatic carboxylic acid ester structure have an excellent resolution and provide a precise pattern profile and are useful in microfabrication using electron beams or deep-UV light.

IT **22495-17-6P**, 2-(1H-Benzimidazol-1-yl)ethyl benzoate
851706-05-3P
(nitrogen-containing organic compound, **resist** composition and patterning process)

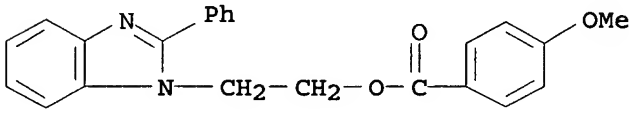
RN 22495-17-6 HCAPLUS

CN 1H-Benzimidazole-1-ethanol, benzoate (ester) (9CI) (CA INDEX NAME)



RN 851706-05-3 HCAPLUS

CN Benzoic acid, 4-methoxy-, 2-(2-phenyl-1H-benzimidazol-1-yl)ethyl ester (9CI) (CA INDEX NAME)



IC ICM G03C001-492

INCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

ST nitrogen org **photoresist** compn process

IT Photolithography
Photoresists
(nitrogen-containing organic compound, **resist** composition and patterning process)

IT 51-17-2, Benzimidazole 98-88-4, Benzoyl chloride 100-07-2, 4-Methoxybenzoyl chloride 102-71-6, Triethanolamine, reactions 527-69-5, 2-Furoyl chloride 622-40-2, 2-Morpholinoethanol 879-18-5, 1-Naphthoyl chloride 1615-14-1, 2-(Imidazol-1-yl)ethanol 2243-83-6, 2-Naphthoyl chloride 2955-88-6, 2-(1-Pyrrolidinyl)ethanol 5452-06-2, 2-Chloroethyl 4-methoxybenzoate 6425-32-7, 3-Morpholinopropane-1,2-diol 14002-51-8, 4-Phenylbenzoyl chloride 17209-72-2 17213-57-9, 3,5-Dimethoxybenzoyl chloride 33941-15-0, 1-Aza-18-crown-6 79402-97-4 98998-43-7
(nitrogen-containing organic compound, **resist** composition and patterning process)

IT **22495-17-6P**, 2-(1H-Benzimidazol-1-yl)ethyl benzoate 47750-79-8P 79690-87-2P 192817-77-9P, Ethyl 2-(1-pyrrolidinyl)benzoate 497057-34-8P 851705-95-8P 851705-97-0P 851705-99-2P 851706-00-8P 851706-01-9P 851706-02-0P 851706-03-1P 851706-04-2P **851706-05-3P** 851706-06-4P 851706-07-5P

(nitrogen-containing organic compound, **resist** composition and patterning process)

L24 ANSWER 4 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:394655 HCAPLUS
DOCUMENT NUMBER: 142:454315
TITLE: Nitrogen-containing organic compound, **resist** composition and patterning process
INVENTOR(S): Watanabe, Takeru; Kinsho, Takeshi; Takemura, Katsuya; Seki, Akihiro
PATENT ASSIGNEE(S): Shin-Etsu Chemical Co., Ltd., Japan
SOURCE: U.S. Pat. Appl. Publ., 23 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005095533	A1	20050505	US 2004-974759	2004 1028
JP 2005132749	A2	20050526	JP 2003-368421	2003 1029

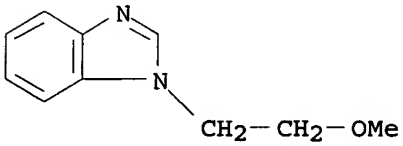
PRIORITY APPLN. INFO.: JP 2003-368421 A 2003 1029

OTHER SOURCE(S): MARPAT 142:454315

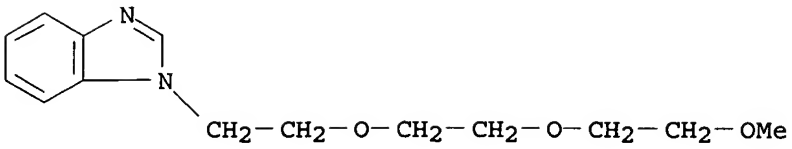
AB **Resist** compns. comprises nitrogen-containing organic compds. having a benzimidazole structure and a specific ether chain moiety have an excellent resolution, form precisely configured patterns with minimized roughness of sidewalls and are useful in microfabrication using electron beams or deep-UV light.

IT **118468-98-7P 639477-67-1P 671201-35-7P**
(nitrogen-containing organic compound for **resist** composition and patterning process)

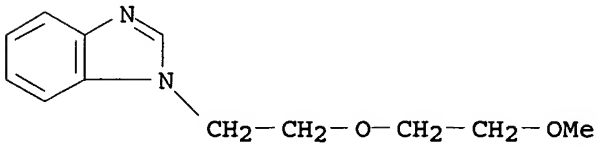
RN 118468-98-7 HCAPLUS
CN 1H-Benzimidazole, 1-(2-methoxyethyl)- (9CI) (CA INDEX NAME)



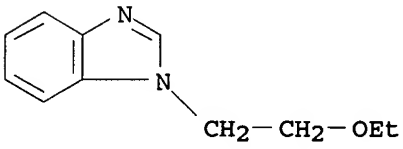
RN 639477-67-1 HCAPLUS
CN 1H-Benzimidazole, 1-[2-[2-(2-methoxyethoxy)ethoxy]ethyl]- (9CI) (CA INDEX NAME)



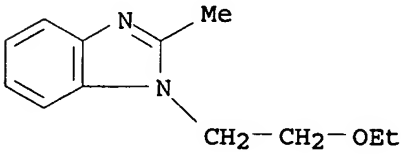
RN 671201-35-7 HCAPLUS
CN 1H-Benzimidazole, 1-[2-(2-methoxyethoxy)ethyl]- (9CI) (CA INDEX NAME)



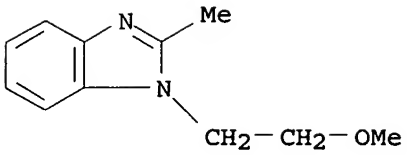
IT **143656-17-1P 160665-97-4P 444995-61-3P**
488086-49-3P 488719-18-2P 488795-64-8P
497241-32-4P 637324-61-9P 637324-85-7P
851211-18-2P 851211-19-3P 851211-20-6P
851211-22-8P 851211-23-9P 851211-24-0P
851211-25-1P 851211-26-2P 851211-27-3P
851211-28-4P
(nitrogen-containing organic compound for **resist** composition and patterning process)
RN 143656-17-1 HCAPLUS
CN 1H-Benzimidazole, 1-(2-ethoxyethyl)- (9CI) (CA INDEX NAME)



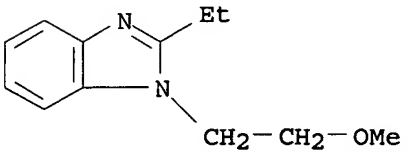
RN 160665-97-4 HCAPLUS
CN 1H-Benzimidazole, 1-(2-ethoxyethyl)-2-methyl- (9CI) (CA INDEX NAME)



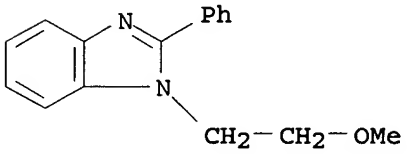
RN 444995-61-3 HCAPLUS
CN 1H-Benzimidazole, 1-(2-methoxyethyl)-2-methyl- (9CI) (CA INDEX NAME)



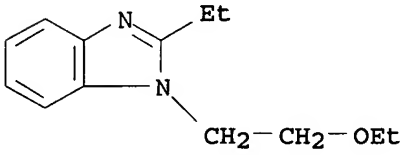
RN 488086-49-3 HCAPLUS
CN 1H-Benzimidazole, 2-ethyl-1-(2-methoxyethyl)- (9CI) (CA INDEX NAME)



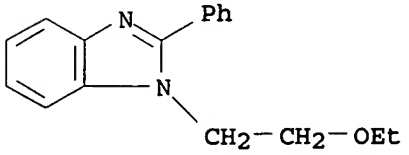
RN 488719-18-2 HCAPLUS
CN 1H-Benzimidazole, 1-(2-methoxyethyl)-2-phenyl- (9CI) (CA INDEX NAME)



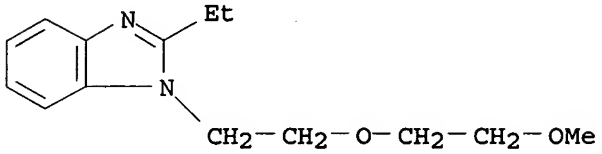
RN 488795-64-8 HCAPLUS
CN 1H-Benzimidazole, 1-(2-ethoxyethyl)-2-ethyl- (9CI) (CA INDEX NAME)



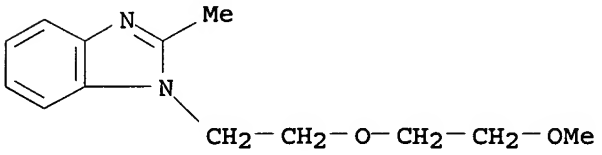
RN 497241-32-4 HCAPLUS
CN 1H-Benzimidazole, 1-(2-ethoxyethyl)-2-phenyl- (9CI) (CA INDEX NAME)



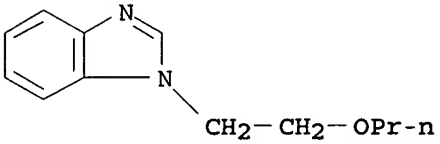
RN 637324-61-9 HCAPLUS
CN 1H-Benzimidazole, 2-ethyl-1-[2-(2-methoxyethoxy)ethyl]- (9CI) (CA INDEX NAME)



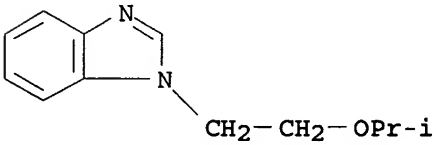
RN 637324-85-7 HCAPLUS
CN 1H-Benzimidazole, 1-[2-(2-methoxyethoxy)ethyl]-2-methyl- (9CI) (CA INDEX NAME)



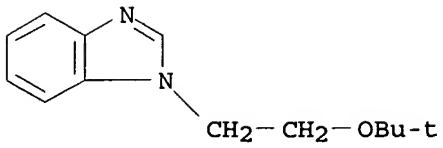
RN 851211-18-2 HCAPLUS
CN 1H-Benzimidazole, 1-(2-propoxyethyl)- (9CI) (CA INDEX NAME)



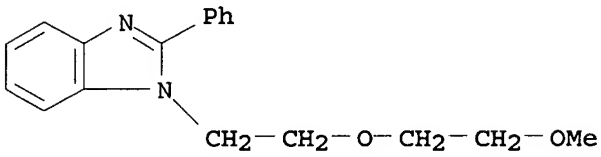
RN 851211-19-3 HCAPLUS
CN 1H-Benzimidazole, 1-[2-(1-methylethoxy)ethyl]- (9CI) (CA INDEX NAME)



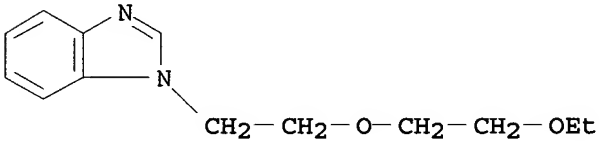
RN 851211-20-6 HCAPLUS
CN 1H-Benzimidazole, 1-[2-(1,1-dimethylethoxy)ethyl]- (9CI) (CA INDEX NAME)



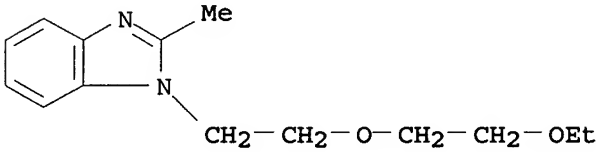
RN 851211-22-8 HCAPLUS
CN 1H-Benzimidazole, 1-[2-(2-methoxyethoxy)ethyl]-2-phenyl- (9CI) (CA INDEX NAME)



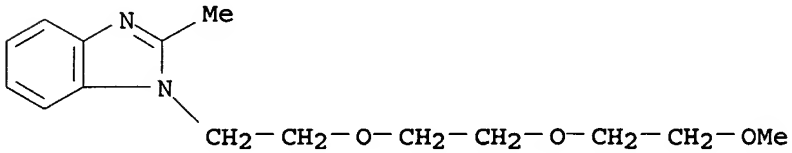
RN 851211-23-9 HCAPLUS
CN 1H-Benzimidazole, 1-[2-(2-ethoxyethoxy)ethyl]- (9CI) (CA INDEX NAME)



RN 851211-24-0 HCAPLUS
CN 1H-Benzimidazole, 1-[2-(2-ethoxyethoxy)ethyl]-2-methyl- (9CI) (CA INDEX NAME)

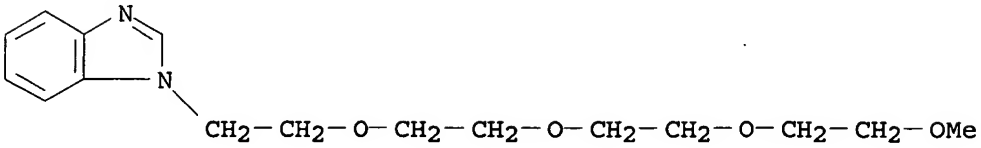


RN 851211-25-1 HCAPLUS
CN 1H-Benzimidazole, 1-[2-[2-(2-methoxyethoxy)ethoxy]ethyl]-2-methyl- (9CI) (CA INDEX NAME)

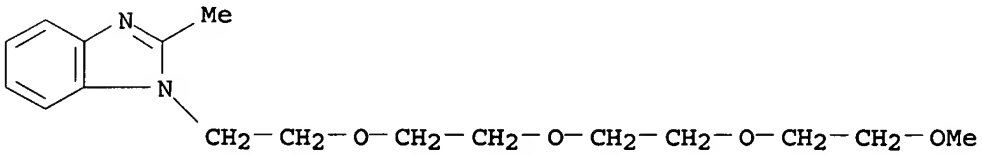


RN 851211-26-2 HCAPLUS

CN 1H-Benzimidazole, 1-(3,6,9,12-tetraoxatridec-1-yl)- (9CI) (CA INDEX NAME)

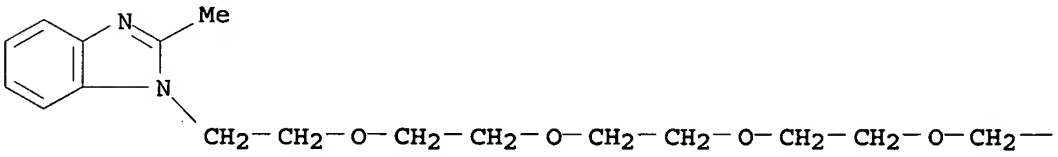


RN 851211-27-3 HCAPLUS
CN 1H-Benzimidazole, 2-methyl-1-(3,6,9,12-tetraoxatridec-1-yl)- (9CI) (CA INDEX NAME)



RN 851211-28-4 HCAPLUS
CN 1H-Benzimidazole, 2-methyl-1-(3,6,9,12,15-pentaoxahexadec-1-yl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

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IC ICM G03C001-73
INCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 38
ST nitrogen org compd **photoresist** compn patterning process
IT Photolithography
Photoresists
(nitrogen-containing organic compound for **resist** composition and patterning process)
IT **118468-98-7P 639477-67-1P 671201-35-7P**
(nitrogen-containing organic compound for **resist** composition and

patterning process)

IT **143656-17-1P 160665-97-4P 444995-61-3P**
488086-49-3P 488719-18-2P 488795-64-8P
497241-32-4P 637324-61-9P 637324-85-7P
851211-18-2P 851211-19-3P 851211-20-6P
851211-21-7P **851211-22-8P 851211-23-9P**
851211-24-0P 851211-25-1P 851211-26-2P
851211-27-3P 851211-28-4P 851211-29-5P
(nitrogen-containing organic compound for **resist** composition and patterning process)

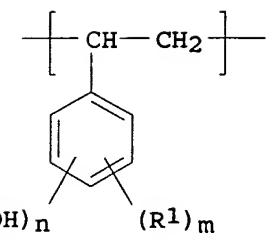
IT 51-17-2, Benzimidazole 615-15-6, 2-MethylBenzimidazole 627-42-9, 2-Chloroethyl methyl ether 628-34-2, 2-Chloroethyl ethyl ether 716-79-0, 2-PhenylBenzimidazole 1848-84-6, 2-EthylBenzimidazole 13830-12-1, 2-Chloroethyl isopropyl ether 17229-11-7 41771-35-1, 2-Chloroethyl 2-ethoxyethyl ether 42149-74-6, 2-Chloroethyl propyl ether 52808-36-3, 2-Chloroethyl 2-methoxyethyl ether 52995-76-3 53067-04-2 57722-04-0 120259-67-8
(preparation of nitrogen-containing organic compound for **resist** composition and patterning process)

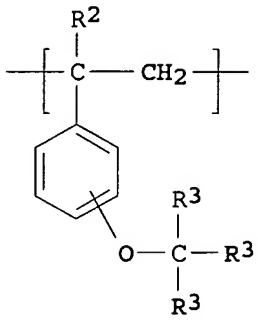
L24 ANSWER 5 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:315916 HCAPLUS
DOCUMENT NUMBER: 142:382185
TITLE: Chemically amplified positive-working **resists** sensitive for far-IR, x ray, and electron beam
INVENTOR(S): Nagai, Tomoki; Miyaji, Shoji; Hara, Hiromichi; Murata, Makoto
PATENT ASSIGNEE(S): JSR Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 22 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005099076	A2	20050414	JP 2003-329356	2003 0922

PRIORITY APPLN. INFO.: JP 2003-329356 2003 0922

OTHER SOURCE(S): MARPAT 142:382185
GI

Q1 = 

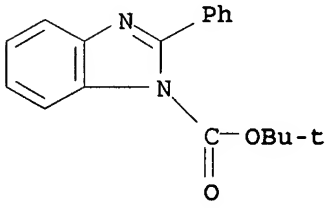
Q2 = 

AB The **resists** contain (A) alkali-insol. polymers having repeating unit of Q1 (R1 = monovalent organic group, n = 1-3, m = 0-2) and Q2 [R2 = H, Me; R3 = C1-4 hydrocarbyl] becoming alkali soluble upon dissociation of C(R3)3 groups, and (B) N-sulfonyloxyimides and di-Ph iodonium salts as photoacid generators. Preferably, the **resists** further contain acid-diffusion inhibitors. The **resists** show high sensitivity for far IR, x ray, and electron beams.

IT **193810-83-2**, N-tert-Butoxycarbonyl-2-phenyl benzimidazole
(acid-diffusion inhibitor; in chemical amplified pos.-working **resist** sensitive for far-IR, x ray, and electron beam)

RN 193810-83-2 HCAPLUS

CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 38

ST pos **resist** photoacid generator sulfonyloxyimide diphenyliodonium; far IR pos **resist** photoacid generator multiple; x ray pos **resist** photoacid generator multiple; electron beam pos **resist** photoacid generator multiple

IT Positive **photoresists**
(UV, chemical amplified; chemical amplified pos.-working **resist** sensitive for far-IR, x ray, and electron beam)

IT Electron beam **resists**
X-ray **resists**
(pos.-working, chemical amplified; chemical amplified pos.-working **resist** sensitive for far-IR, x ray, and electron beam)

IT 716-79-0, 2-Phenylbenzimidazole **193810-83-2**, N-tert-Butoxycarbonyl-2-phenyl benzimidazole
(acid-diffusion inhibitor; in chemical amplified pos.-working **resist** sensitive for far-IR, x ray, and electron beam)

IT 288622-96-8P, p-tert-Butoxystyrene-p-hydroxystyrene-styrene copolymer 406198-55-8DP, p-Acetoxystyrene-p-tert-butoxystyrene-N,N-dimethylacrylamide-styrene copolymer, hydrolyzed 406198-64-9DP, p-Acetoxystyrene-p-tert-butoxystyrene-styrene copolymer, hydrolyzed 849671-40-5P, p-tert-Butoxystyrene-N,N-dimethylacrylamide-p-hydroxystyrene-styrene copolymer
(in chemical amplified pos.-working **resist** sensitive for far-IR, x ray, and electron beam)

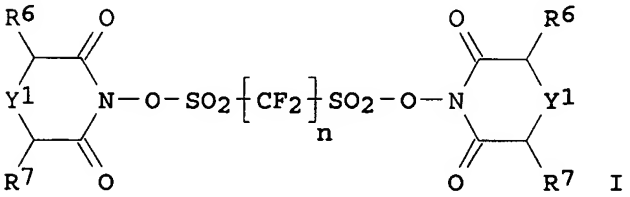
IT 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 133710-62-0 194999-82-1 214534-44-8, Diphenyliodonium 10-camphorsulfonate 307531-76-6
(photoacid generator; in chemical amplified pos.-working **resist** sensitive for far-IR, x ray, and electron beam)

L24 ANSWER 6 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:1125476 HCAPLUS
DOCUMENT NUMBER: 142:65319
TITLE: Acid generators and positively or negatively working radiation-sensitive resin compositions containing the same
INVENTOR(S): Ibata, Satoshi; Nagai, Tomoki; O, Isamu
PATENT ASSIGNEE(S): JSR Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 63 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004359590	A2	20041224	JP 2003-158808	20030604

PRIORITY APPLN. INFO.: JP 2003-158808 20030604

OTHER SOURCE(S): MARPAT 142:65319
GI



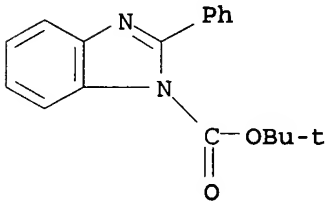
AB The acid generators comprise compds. having the structure of SO2(CF2)nSO2 (n = 2-10 integer), preferably, disulfonic acid onium salts SO3-(CF2)nSO3- 2M+ (n = 2-10 integer; M+ = monovalent onium cation). Preferably, M+ comprises sulfonium cations R1R2R3S+ or iodonium cations R4R5I+ (R1-R5 = C1-10 alkyl, C6-18 aryl; ≥1 of R1-R3 may be bonded together and form ring with S; R4 and R5 may be bonded together and form ring with I). Acid

generators comprising N,N'-di(sulfonyloximides) I (n = 2-10 integer; R6, R7 = H, monovalent organic group; R6 and R7 bonding to the same imide ring may be bonded together and form ring; Y1 = single bond, double bond, divalent organic group) are also claimed. The pos. working radiation-sensitive resin compns. contain (A) radiation-sensitive acid generators involving any of the above-mentioned acid generators and (B) resins which are insol. or slightly soluble in alkalis, bear acid-dissociable groups, and become soluble in alkalis upon dissociation of the acid-dissociable groups. The neg.-working radiation-sensitive resin compns. contain (A) radiation-sensitive acid generators involving any of the above-mentioned acid generators, (C) alkali-soluble resins, and (D) compds. capable of crosslinking the alkali-soluble resins in the presence of acids. The acids generated from the acid generators have sufficiently high acidity and b.p., the diffusion length of the acids in **resist** films is appropriately short, mask pattern dependency is small, and focus depth is excellent.

IT **193810-83-2**, N-tert-Butoxycarbonyl-2-phenylbenzimidazole
(diffusion controlling agent; disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)

RN 193810-83-2 HCAPLUS

CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM C07C309-06
ICS C07C381-12; C07D207-46; C07D209-52; C07D221-14; C07D491-18; G03F007-004; G03F007-038; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

ST disulfonic acid generator deep UV **resist**; pos **photoresist** disulfonic acid generator; neg **photoresist** disulfonic acid generator

IT Negative **photoresists**
Positive **photoresists**
(deep UV; disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)

IT Sulfonic acids, preparation
(di-; disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)

IT Onium compounds
(disulfonic acid; disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)

IT **Resists**
(neg.-working radiation-sensitive; disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)

IT **Resists**
(pos.-working radiation-sensitive; disulfonic acid generators for pos. or neg. working radiation-sensitive **resist**

compns.)
IT 17464-88-9
(crosslinking agent; disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)
IT 102-71-6, Triethanolamine, uses 716-79-0, 2-Phenylbenzimidazole 1116-76-3, Tri-n-octylamine 1739-84-0, 1,2-Dimethylimidazole **193810-83-2**, N-tert-Butoxycarbonyl-2-phenylbenzimidazole
(diffusion controlling agent; disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)
IT 133710-62-0 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 144317-44-2, Triphenylsulfonium nonafluoro-n-butanesulfonate 209482-18-8
(disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)
IT 809274-47-3P 809274-48-4P 809274-49-5P 809274-50-8P
(disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)
IT 109-92-2DP, Ethyl vinyl ether, reaction products with 4-tert-butoxystyrene-4-hydroxystyrene copolymer 95418-60-3DP, 4-tert-Butoxystyrene homopolymer, partially hydrolyzed 123589-22-0DP, 4-tert-Butoxystyrene-4-hydroxystyrene copolymer, reaction products with Et vinyl ether 123589-22-0P, 4-tert-Butoxystyrene-4-hydroxystyrene copolymer 200808-68-0P, tert-Butyl acrylate-4-hydroxystyrene-styrene copolymer 221549-67-3DP, 4-Acetoxystyrene-tert-butyl acrylate-styrene copolymer, hydrolyzed 288622-96-8P, 4-tert-Butoxystyrene-4-hydroxystyrene-styrene copolymer 340964-24-1P 340964-38-7P 406198-64-9DP, 4-Acetoxystyrene-4-tert-butoxystyrene-styrene copolymer, hydrolyzed 428516-13-6P 479628-09-6P 670248-60-9P 690258-42-5P 726175-42-4P
(disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)
IT 24979-74-6, 4-Hydroxystyrene-styrene copolymer
(disulfonic acid generators for pos. or neg. working radiation-sensitive **resist** compns.)

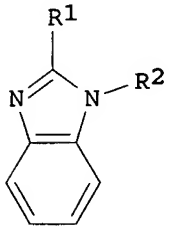
L24 ANSWER 7 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:1058692 HCAPLUS
DOCUMENT NUMBER: 142:45905
TITLE: Basic compounds, **resist** materials, and pattern formation
INVENTOR(S): Watanabe, Takeshi; Kaneo, Takeshi; Hasegawa, Koji
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004347738	A2	20041209	JP 2003-142853	2003 0521
US 2005008968	A1	20050113	US 2004-849197	2004

Applicant

PRIORITY APPLN. INFO.: JP 2003-142853 A 0520 2003 0521

OTHER SOURCE(S): MARPAT 142:45905
GI

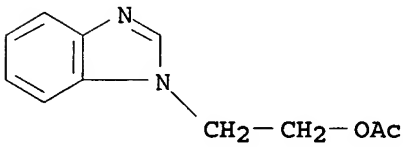


I

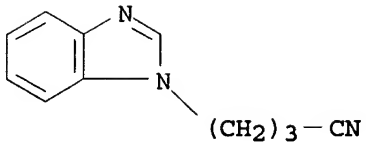
AB The **resist** materials contain ≥1 benzimidazole-based basic compds. having polar functional groups I (R1 = H, C1-10 normal, branched, or cyclic alkyl, C6-10 aryl, C7-10 aralkyl; R2 = C1-20 normal, branched, or cyclic alkyl having ≥1 polar functional groups selected from ester, acetal, and cyano; R2 may contain OH, carbonyl, ether, sulfide, and/or carbonate). Patterns are formed by (1) applying the materials on substrates, (2) heating, (3) exposing to ≤300-nm high energy beam or electron beam via photomasks, (4) heating, and (5) developing. Six kinds of Markush structures of benzimidazole-based basic compds. are also claimed. The **resist** materials show high resolution and large focus margin.

IT **46400-55-9P 58553-97-2P**, 1H-Benzimidazole-1-butanenitrile **102025-46-7P 502651-76-5P 804550-88-7P 804550-89-8P 804550-90-1P 804550-91-2P 804550-93-4P**
(benzimidazole-based basic compds. for **resists** with high resolution and large focus margin)

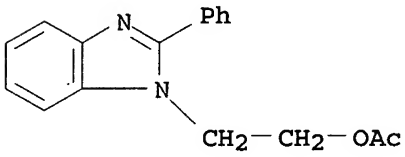
RN 46400-55-9 HCAPLUS
CN 1H-Benzimidazole-1-ethanol, acetate (ester) (9CI) (CA INDEX NAME)



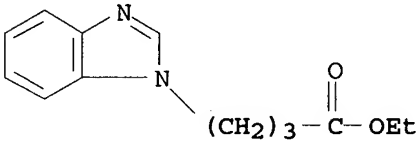
RN 58553-97-2 HCAPLUS
CN 1H-Benzimidazole-1-butanenitrile (9CI) (CA INDEX NAME)



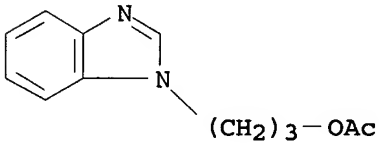
RN 102025-46-7 HCAPLUS
CN 1H-Benzimidazole-1-ethanol, 2-phenyl-, acetate (ester) (9CI) (CA INDEX NAME)



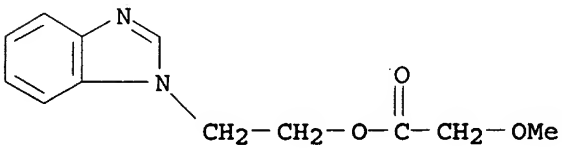
RN 502651-76-5 HCAPLUS
CN 1H-Benzimidazole-1-butanoic acid, ethyl ester (9CI) (CA INDEX NAME)



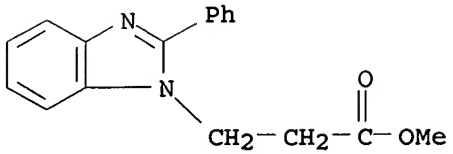
RN 804550-88-7 HCAPLUS
CN 1H-Benzimidazole-1-propanol, acetate (ester) (9CI) (CA INDEX NAME)



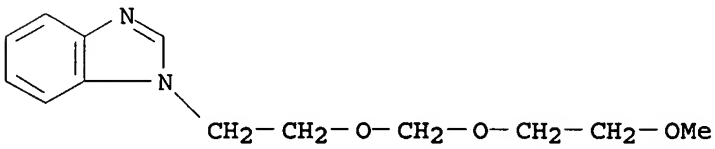
RN 804550-89-8 HCAPLUS
CN Acetic acid, methoxy-, 2-(1H-benzimidazol-1-yl)ethyl ester (9CI) (CA INDEX NAME)



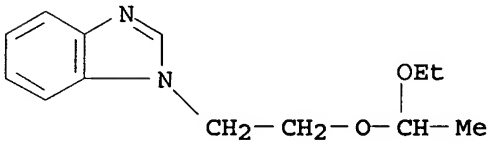
RN 804550-90-1 HCAPLUS
CN 1H-Benzimidazole-1-propanoic acid, 2-phenyl-, methyl ester (9CI) (CA INDEX NAME)



RN 804550-91-2 HCAPLUS
CN 1H-Benzimidazole, 1-[2-[(2-methoxyethoxy)methoxy]ethyl]- (9CI) (CA INDEX NAME)



RN 804550-93-4 HCAPLUS
CN 1H-Benzimidazole, 1-[2-(1-ethoxyethoxy)ethyl]- (9CI) (CA INDEX NAME)



IC ICM G03F007-004
ICS C07D235-12; C07D235-16; C07D405-06; C09K003-00; G03F007-038; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 28
ST benzimidazole basic compd **resist** pattern formation; focus margin benzimidazole basic compd **resist**
IT Negative **photoresists**
Positive **photoresists**
(benzimidazole-based basic compds. for **resists** with high resolution and large focus margin)
IT 6293-66-9, Diphenyliodonium tosylate 138529-81-4, Bis(cyclohexanesulfonyl)diazomethane 144317-44-2, Triphenylsulfonium perfluorobutanesulfonate 161453-44-7 266308-64-9
(acid generators; benzimidazole-based basic compds. for **resists** with high resolution and large focus margin)
IT **46400-55-9P 58553-97-2P**, 1H-Benzimidazole-1-butanenitrile **102025-46-7P** 172678-64-7P **502651-76-5P 804550-88-7P 804550-89-8P 804550-90-1P 804550-91-2P 804550-93-4P** 804550-95-6P
(benzimidazole-based basic compds. for **resists** with high resolution and large focus margin)
IT 24979-74-6, 4-Hydroxystyrene-styrene copolymer 123589-22-0,

4-tert-Butoxystyrene-4-hydroxystyrene copolymer 129674-22-2
158593-28-3 221900-55-6 279243-86-6 326925-68-2
336620-37-2 443796-30-3 645393-08-4 651043-12-8
798570-42-0 804550-98-9 804551-00-6
(benzimidazole-based basic compds. for **resists** with high resolution and large focus margin)

IT 6340-03-0P, 1H-Benzimidazole-1-ethanol
(intermediates in base preparation; benzimidazole-based basic compds. for **resists** with high resolution and large focus margin)

IT 51-17-2, Benzimidazole 75-21-8, Ethylene oxide, reactions
96-33-3, Methyl acrylate 108-24-7, Acetic anhydride 592-33-6,
3-Bromopropyl acetate 716-79-0, 2-Phenylbenzimidazole
2969-81-5, Ethyl 4-bromobutanoate 5332-06-9,
4-Bromobutyronitrile 6290-49-9, Methyl methoxyacetate
18742-02-4, 2-(2-Bromoethyl)-1,3-dioxolane 36236-76-7,
4-Bromomethyl-2,2-dimethyl-1,3-dioxolane 78487-70-4
804550-96-7
(reactants in base preparation; benzimidazole-based basic compds. for **resists** with high resolution and large focus margin)

L24 ANSWER 8 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:392711 HCAPLUS
DOCUMENT NUMBER: 140:414937
TITLE: Radiation-sensitive resin composition containing specific resin
INVENTOR(S): Nishimura, Yukio; Ishii, Hiroyuki; Nishimura, Isao; Kobayashi, Eiichi
PATENT ASSIGNEE(S): JSR Corporation, Japan
SOURCE: PCT Int. Appl., 126 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

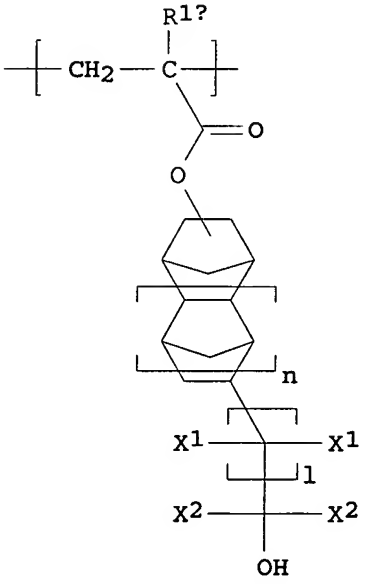
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004040376	A1	20040513	WO 2003-JP13560	2003 1023
WO 2004040376	B1	20040708		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2005043852	A2	20050217	JP 2003-359842	2003 1020
AU 2003280571	A1	20040525	AU 2003-280571	2003

				1023
EP 1557718	A1	20050727	EP 2003-769916	2003 1023

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

PRIORITY APPLN. INFO.:	JP 2002-315021	A 2002 1029
	JP 2003-192477	A 2003 0704
	WO 2003-JP13560	W 2003 1023

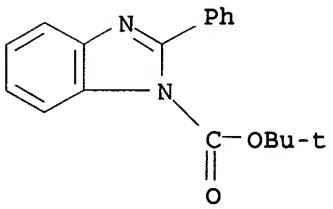
GI



I

AB The invention relates to a radiation-sensitive resin composition which is useful as a chemical amplified **resist** in micro-fabrication with various radiations including far UV rays such as KrF excimer laser radiation and ArF excimer laser radiation. The composition comprises [A] a resin comprising repeating units represented by the general formulaI(R1a = H, Me, C1-4 hydroxyalkyl, C1-4 perfluoroalkyl; X1-2 = H, F, C1-4 alkyl, C1-4 fluorinated alkyl, l = integer 0-5; n = integer 0-2), [B] a radiation-sensitive acid generator (such as 1-(4-n-butoxynaphthyl)tetrahydrothiophenium nonafluoro-n -butanesulfonate), and, if necessary, [C] an acid diffusion

controller (such as phenylbenzimidazole).
IT **193810-83-2**, N-tert-Butoxycarbonyl-2-phenylbenzimidazole
(radiation-sensitive resin composition)
RN 193810-83-2 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 35
IT Light-sensitive materials
Photoresists
(radiation-sensitive resin composition)
IT 109384-19-2, N-(tert-Butoxycarbonyl)-4-hydroxypiperidine
193810-83-2, N-tert-Butoxycarbonyl-2-phenylbenzimidazole
(radiation-sensitive resin composition)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 9 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:203439 HCAPLUS
DOCUMENT NUMBER: 140:261399
TITLE: Low silicon-outgassing **resist** for bilayer lithography
INVENTOR(S): Khojasteh, Mahmoud M.; Kwong, Ranee W.; Chen, Kuang-Jung; Varanasi, Pushkara Rao; Allen, Robert D.; Brock, Phillip; Houle, Frances; Sooriyakumaran, Ratnam
PATENT ASSIGNEE(S): International Business Machines Corp., USA
SOURCE: U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004048187	A1	20040311	US 2002-241937	20020911
US 6770419	B2	20040803		
WO 2004068243	A1	20040812	WO 2003-US28770	20030911

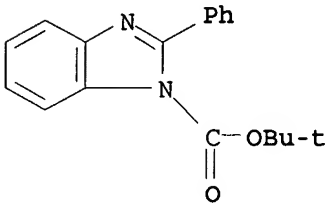
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI,

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU,
SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL,
PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG
EP 1546813 A1 20050629 EP 2003-815294
2003
0911
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ,
EE, HU, SK
PRIORITY APPLN. INFO.: US 2002-241937 A
2002
0911

WO 2003-US28770 W
2003
0911

AB The silicon-containing **resist** compns. which have low silicon outgassing and high resolution lithog. performance, especially in bilayer or multilayer lithog. applications using 193 nm or shorter wavelength imaging radiation are enabled by the presence of an imaging polymer having silicon-containing, non-acid-labile pendant groups. The **resist** compns. of the invention are preferably further characterized by the substantial absence of silicon-containing acid-labile moieties.

IT **193810-83-2**
(low silicon-outgassing **resist** for bilayer lithog.)
RN 193810-83-2 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-038
ICS G03F007-38
INCL 430270100; 430313000; 430330000; 430905000
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
ST low silicon outgassing **resist** bilayer lithog **photoresist** compn
IT **Photoresists**
(low silicon-outgassing **resist** for bilayer lithog.)
IT 669067-94-1P 669067-95-2P
(low silicon-outgassing **resist** for bilayer lithog.)
IT **193810-83-2** 218151-20-3 240435-11-4 307531-76-6

(low silicon-outgassing **resist** for bilayer lithog.)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

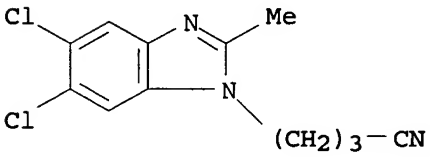
L24 ANSWER 10 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:692240 HCAPLUS
DOCUMENT NUMBER: 139:308867
TITLE: Synthesis and UV/vis spectra of J-aggregating 5,5',6,6'-tetrachlorobenzimidacarbocyanine dyes for artificial light-harvesting systems and for asymmetrical generation of supramolecular helices
AUTHOR(S): Pawlik, Andreas; Ouart, Andre; Kirstein, Stefan; Abraham, Hans-Werner; Daehne, Siegfried
CORPORATE SOURCE: Max-Planck-Institute of Colloids and Interfaces, Golm/Potsdam, 14476, Germany
SOURCE: European Journal of Organic Chemistry (2003), (16), 3065-3080
CODEN: EJOCFK; ISSN: 1434-193X
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:308867
AB A new class of dyes, in which the self-assembling property of surfactants is combined with the capability for light energy propagation over long distances in dye J-aggregates, is described. This has been achieved by the syntheses of achiral 5,5',6,6'-tetrachlorobenzimidacarbocyanine dyes possessing systematically varied hydrophobic and hydrophilic substituents at their nitrogen atoms. These substituents are introduced into a 5,6-dichlorobenzimidazole precursor by substitution, either firstly by nucleophilic reaction with ω-bromoalkylnitriles and secondly by quaternization with alkyl bromides or firstly by nucleophilic reaction with alkyl bromides and secondly by quaternization with ω-bromoalkylnitriles or ω-bromoalkyl esters and subsequent saponification The UV/visible spectra of 20 differently substituted dyes containing the same chromophore have been investigated. The spectra of the dye monomers in DMSO are nearly identical, with no signs of optically activity, whereas in aqueous alkaline solns. quite different spectra are obtained for the dyes, indicating the formation of different aggregates depending on the nitrogen substituents. One of these types of J-aggregate is optically inactive and displays a single red-shifted (with respect to the dye monomers) absorption band, resembling the behavior of J-aggregates of common cyanine dyes. In the cases of strongly amphiphilic 5,5',6,6'-benzimidacarbocyanines with 1,1'-dialkyl substituents longer than hexyl and 3,3'-bis(2-carboxyethyl), 3,3'-bis(3-carboxypropyl), or 3,3'-bis(3-sulfopropyl) substituents, a new type of J-aggregate is formed, and is distinguished by a doubly or even triply split J-absorption band that displays optical activity. A third type of aggregate showing different spectral behavior occurs when the dyes contain very short 3,3'-bis(carboxymethyl) substituents or strongly hydrophobic fluorinated octyl groups, or when all four nitrogen atoms are identically substituted by hydrophilic 3-carboxypropyl groups. The various types of dye aggregates have been characterized through UV/visible spectroscopic parameters such as the positions and widths of the absorption and

fluorescence bands, the Stokes' shifts, the coupling consts., and the strength of the J-band splitting. The results provide new prospects for the development of new artificial light-harvesting systems as well as for the understanding of the evolution of asymmetry in the biosphere.

IT **611233-49-9P**
(intermediate; preparation and UV/vis spectra of J-aggregating cyanine dyes)

RN 611233-49-9 HCAPLUS

CN 1H-Benzimidazole-1-butanenitrile, 5,6-dichloro-2-methyl- (9CI) (CA INDEX NAME)



CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and **Photographic** Sensitizers)
Section cross-reference(s): 28, 73

IT 6858-62-4P 163403-24-5P 163403-28-9P 171354-91-9P
251095-00-8P **611233-49-9P** 611233-53-5P 611233-54-6P
611233-55-7P 611233-56-8P 611233-57-9P 611233-58-0P
611233-59-1P 611233-60-4P 611233-61-5P 611233-62-6P
611233-63-7P 611233-64-8P
(intermediate; preparation and UV/vis spectra of J-aggregating cyanine dyes)

REFERENCE COUNT: 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 11 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:510302 HCAPLUS
DOCUMENT NUMBER: 139:76306
TITLE: Heat-developable photographic material giving high-contrast image
INVENTOR(S): Usakawa, Yasushi; Hanyu, Takeshi; Yasukawa, Hiroyuki
PATENT ASSIGNEE(S): Konica Co., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 27 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003186140	A2	20030703	JP 2001-381446	2001 1214

PRIORITY APPLN. INFO.: JP 2001-381446 2001 1214

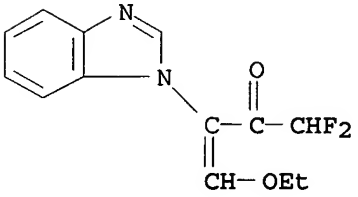
OTHER SOURCE(S): MARPAT 139:76306

AB The material has a photosensitive layer containing a photosensitive Ag halide on a support, wherein at least one of a photosensitive layer or a light-insensitive layer contains an organic Ag salt, a reducing agent, and CXW:CHA and/or CYA:CHR (X = substituted alkyl, substituted alkenyl, alkynyl, aryl, heterocyclic, halo, acyl, thioacyl, oxalyl, oxyoxalyl, -S-oxalyl, oxamoyl, oxycarbonyl, -S-carbonyl, carbamoyl, thiocarbamoyl, sulfonyl, sulfinyl, oxysulfonyl, -S-sulfonyl, sulfamoyl, oxysulfinyl, -S-sulfinyl, sulfinamoyl, phosphoryl, nitro, imino, N-carbonylimino, N-sulfonylimino, ammonium, sulfonium, phosphonium, pyrylium, immonium; W = H, alkyl, aryl, oxy, thio, amino, nonarom. heterocyclic, silyl; A = N-containing aromatic heterocyclic group linking through N in the ring; Y = H, substituent; R = halo, oxy, thio, amino, heterocyclic, silyl). Preferably, (a) the photosensitive Ag halide is doped with transition metal complexes and/or (b) the photog. material contains hydrazines. The material shows high sensitivity and low fogging even stored at high temperature and humidity.

IT **552301-65-2 552301-67-4**
(heat-developable photog. material using N-containing heterocyclic double bond compds. for high-contrast image)

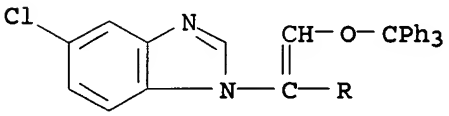
RN 552301-65-2 HCAPLUS

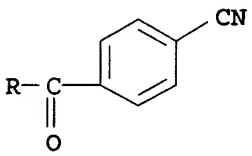
CN 3-Buten-2-one, 3-(1H-benzimidazol-1-yl)-4-ethoxy-1,1-difluoro- (9CI) (CA INDEX NAME)



RN 552301-67-4 HCAPLUS

CN Benzonitrile, 4-[2-(5-chloro-1H-benzimidazol-1-yl)-1-oxo-3-(triphenylmethoxy)-2-propenyl]- (9CI) (CA INDEX NAME)





IC ICM G03C001-498

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

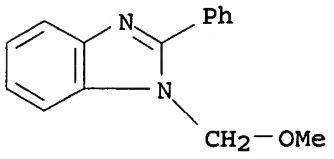
IT 85598-48-7 552301-51-6 552301-52-7 552301-53-8 552301-54-9
552301-55-0 552301-56-1 552301-57-2 552301-58-3

552301-59-4 552301-60-7 552301-61-8 552301-62-9
552301-63-0 552301-64-1 **552301-65-2** 552301-66-3
552301-67-4 552301-68-5 552301-69-6 552301-70-9
552301-71-0 552301-72-1 552301-73-2 552301-74-3
552301-75-4 552301-76-5 552301-77-6
(heat-developable photog. material using N-containing heterocyclic double bond compds. for high-contrast image)

L24 ANSWER 12 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:111378 HCAPLUS
DOCUMENT NUMBER: 138:161077
TITLE: Radiation-sensitive chemically amplified **resist** resin composition containing specific nitrogen-containing compound as acid-diffusion-control agent
INVENTOR(S): Nagai, Tomoki; Kobayashi, Eiichi; Shimokawa, Tsutomu
PATENT ASSIGNEE(S): JSR Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 25 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003043677	A2	20030213	JP 2001-234136	2001 0801
PRIORITY APPLN. INFO.:			JP 2001-234136	2001 0801

OTHER SOURCE(S): MARPAT 138:161077
AB The title composition contains a radiation-sensitive acid-generator and an acid-sensitive alkali solubilizable resin or both alkali solubilizable resin/alkali-solubility-controlling agent for the resin, wherein sulfur compound (R1)(R2)N-S(O)2-R3(R1-3 = H, C1-20 hydrocarbon). The composition provides the **resists** of high resolution, high durability, and good storageability.
IT **428859-16-9P**
(radiation-sensitive chemical amplified **resist** resin composition containing specific nitrogen-containing compound)
RN 428859-16-9 HCAPLUS
CN 1H-Benzimidazole, 1-(methoxymethyl)-2-phenyl- (9CI) (CA INDEX NAME)



IC ICM G03F007-004
ICS G03F007-038; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
ST radiation sensitive amplified **resist** resin compn
IT **Resists**
(radiation-sensitive, chemical amplified; radiation-sensitive chemical amplified **resist** resin composition containing specific nitrogen-containing compound)
IT 101-83-7, Dicyclohexylamine 63458-90-2, 1H-Imidazole, 1-methyl-, mono(4-methylbenzenesulfonate)
(acid-diffusion-control agent; radiation-sensitive chemical amplified **resist** resin composition containing specific nitrogen-containing compound)
IT 107-30-2, Methoxymethyl chloride 122-39-4, Diphenylamine, reactions 288-32-4, Imidazole, reactions 716-79-0, 2-Phenylbenzimidazole 4106-18-7, 1H-Benzotriazole,1-(phenylsulfonyl)- 13578-48-8, 1H-1,2,4-Triazole, 1-(phenylsulfonyl)- 18162-48-6
(radiation-sensitive chemical amplified **resist** resin composition containing specific nitrogen-containing compound)
IT 4703-19-9P 15728-50-4P 39830-56-3P 46248-01-5P 95418-60-3DP, p-tert-Butoxystyrene homopolymer, hydrolized 123589-22-0DP, ethoxyethyl ether 200808-68-0P 330576-44-8P 406198-64-9P **428859-16-9P** 479628-09-6P 494868-77-8P
(radiation-sensitive chemical amplified **resist** resin composition containing specific nitrogen-containing compound)

L24 ANSWER 13 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:807548 HCAPLUS
DOCUMENT NUMBER: 137:331078
TITLE: Radiation-sensitive resin composition containing polycyclic compound for chemical amplification **resist**
INVENTOR(S): Yamamoto, Masashi; Ishida, Hidemitsu; Ishii, Hiroyuki; Kajita, Toru
PATENT ASSIGNEE(S): JSR Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 61 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002311590	A2	20021023	JP 2001-113462	2001 0412

PRIORITY APPLN. INFO.: JP 2001-113462 2001 0412

GI

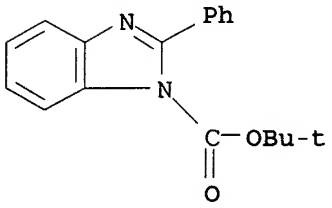
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The radiation-sensitive resin composition comprises (1) a hardly alkaline soluble resin or a alkaline insol. resin, which, becoming alkaline soluble by reaction with an acid, has repeating units selected from I, II, III (R1,3,5 = H, Me; R2,4,6 = H, C1-4alkyl; X = methylene, O, S; a = integer 1-5) and a repeating unit [CR7(COOCR83)CH2] (R7 = H, Me; R8 = C4-20 monovalent aliphatic hydrocarbon, etc.), (2) an photoacid, and (3) a polycyclic compound having the mol. weight ≤1,000. The radiation-sensitive resin composition provided a fine pattern when it is used as a far-UV **photoresist.**

IT **193810-83-2**, N-tert-Butoxycarbonyl-2-phenylbenzimidazole
(acid diffusion suppressing agent; far-UV chemical amplification-type **photoresist** resin composition from)

RN 193810-83-2 HCAPLUS

CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
ICS C08F220-18; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 35, 38

ST chem amplification **resist** resin compn polycyclic compd; far UV **photoresist** compn

IT **Photoresists**
(far-UV chemical amplification-type **photoresist** resin composition containing polycyclic compound)

IT 1148-79-4, 2,2':6',2''-Terpyridine **193810-83-2**, N-tert-Butoxycarbonyl-2-phenylbenzimidazole 330576-56-2, N-t-Butoxycarbonyldicyclohexylamine
(acid diffusion suppressing agent; far-UV chemical amplification-type **photoresist** resin composition from)

IT 195000-69-2P 340964-38-7P 340964-44-5P 473699-88-6P 473699-89-7P
(far-UV chemical amplification-type **photoresist** resin composition from)

IT 157692-53-0, tert-Butyl deoxycholate 213901-06-5 231296-44-9
(far-UV chemical amplification-type **photoresist** resin composition from)

IT 194999-85-4 209482-18-8 307531-76-6 380886-84-0
(photoacid; far-UV chemical amplification-type **photoresist** resin composition from)

IT 96-48-0, γ-Butyrolactone 108-94-1, Cyclohexanone, uses 110-43-0, 2-Heptanone 84540-57-8, Propylene glycol monomethyl ether acetate
(solvent; far-UV chemical amplification-type **photoresist** resin composition from)

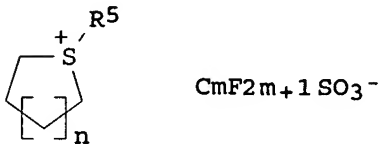
L24 ANSWER 14 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:553153 HCAPLUS
DOCUMENT NUMBER: 137:116956

TITLE: Radiation-sensitive resin composition
INVENTOR(S): Nishimura, Yukio; Yamamoto, Masafumi; Kataoka, Atsuko; Kajita, Toru
PATENT ASSIGNEE(S): JSR Corporation, Japan
SOURCE: Eur. Pat. Appl., 30 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1225480	A2	20020724	EP 2002-1244	20020117
EP 1225480	A3	20030326		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2002132181	A1	20020919	US 2002-46080	20020116
US 6838225	B2	20050104		
JP 2003173026	A2	20030620	JP 2002-9054	20020117

PRIORITY APPLN. INFO.: JP 2001-10005 A 20010118
JP 2001-303820 A 20010928

OTHER SOURCE(S): MARPAT 137:116956
GI

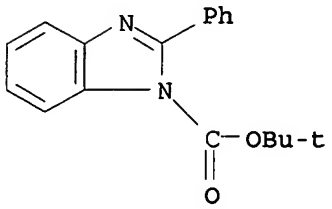


I

AB The present invention relates to a radiation sensitive resin composition suitable as a chemical amplified **resist** useful for microfabrication utilizing various types of radiation, which exhibits high transparency, excellent resolution, dry etching **resistance**, and sensitivity, produces good pattern shapes, and well adheres to substrates. The radiation sensitive resin composition comprises (1) acid-dissociable group-containing resin insol. in alkali but becoming soluble in alkali when the acid-dissociable group dissocs., and containing recurring unit with specific structures; (2) a photoacid generator of formula I (R5 = aromatic hydrocarbon group; m = 1-8; n = 0-5).

IT **193810-83-2**
(acid diffusion controller; radiation-sensitive resin composition

for **photoresist** containing)
RN 193810-83-2 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
ICS G03F007-004
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoresist** resin compn acid generator
IT **Photoresists**
(radiation-sensitive resin composition for)
IT 1116-76-3, Tri-n-octylamine 4847-93-2 7560-83-0, Methyldicyclohexylamine **193810-83-2** 330576-56-2, N-t-Butoxycarbonyldicyclohexylamine
(acid diffusion controller; radiation-sensitive resin composition for **photoresist** containing)
IT 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate 144317-44-2, Triphenylsulfonium nonafluoro-n-butanesulfonate 194999-85-4 209482-18-8 330576-58-4 380886-84-0 406198-76-3
(acid generator; radiation-sensitive resin composition for **photoresist** containing)
IT 157692-53-0, tert-Butyl deoxycholate 169228-97-1, Di-tert-butyl 1,3-adamantanedicarboxylate 231296-44-9, t-Butoxycarbonylmethyl deoxycholate
(additive; radiation-sensitive resin composition for **photoresist** containing)
IT 340964-24-1 340964-44-5 426262-70-6 443346-74-5 443346-76-7 443346-77-8
(resin; radiation-sensitive resin composition for **photoresist** containing)
IT 108-94-1, Cyclohexanone, uses 110-43-0, 2-Heptanone 763-69-9, Ethyl 3-ethoxypropionate 84540-57-8, Propylene glycol monomethyl ether acetate
(solvent; radiation-sensitive resin composition for **photoresist** containing)

L24 ANSWER 15 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:253088 HCAPLUS
DOCUMENT NUMBER: 136:286596
TITLE: Radiation sensitive resin composition
INVENTOR(S): Miyaji, Masaaki; Nagai, Tomoki; Yada, Yuji; Numata, Jun; Nishimura, Yukio; Yamamoto, Masafumi; Ishii, Hiroyuki; Kajita, Toru; Shimokawa, Tsutomu
PATENT ASSIGNEE(S): JSR Corporation, Japan
SOURCE: Eur. Pat. Appl., 71 pp.
CODEN: EPXXDW

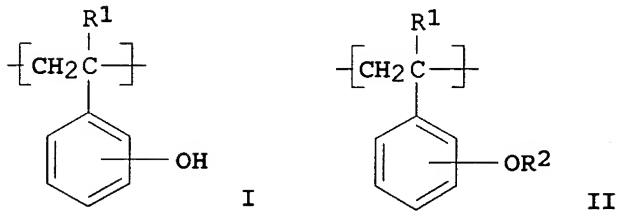
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1193558	A2	20020403	EP 2001-122213	20010917
EP 1193558	A3	20020814		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002202604	A2	20020719	JP 2000-401302	20001228
JP 2002162746	A2	20020607	JP 2001-280035	20010914
US 2002058201	A1	20020516	US 2001-953941	20010918
US 6933094	B2	20050823		
US 2005214680	A1	20050929	US 2005-116269	20050428

PRIORITY APPLN. INFO.:

JP 2000-282689	A	20000918
JP 2000-401302	A	20001228
US 2001-953941	A1	20010918

GI



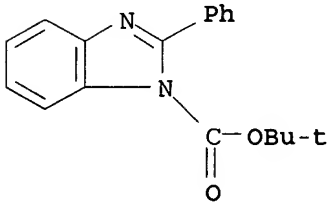
AB A chemical amplified radiation sensitive resin composition comprises a specific copolymer and a photoacid generator, wherein the copolymer contains the recurring unit I and/or II and CH2CR1(C:O)NR3R4 (R1 = H, Me; R2 = C4-10 tertiary alkyl; R3,4 = H, C1-12 alkyl, C6-15 aromatic, C1-12 alkoxyl, or R3 and R4 may form, in combination and together with the nitrogen atom with which the R3 and R4 groups bond, a C3-14 cyclic structure, provided that R3 and

R4 are not a hydrogen atom at the same time). The composition effectively responds to various radiations, exhibits excellent resolution and pattern configuration and minimal iso-dense bias, and can form fine patterns at a high precision and in a stable manner.

IT **193810-83-2**
(acid diffusion control agent; radiation sensitive resin composition for **photoresist** containing)

RN 193810-83-2 HCAPLUS

CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-038
ICS G03F007-039; G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 35, 38

ST chem amplified **photoresist** polymer

IT **Photoresists**
(chemical amplified; radiation sensitive resin composition for)

IT 102-60-3 102-71-6, Triethanolamine, uses 1008-89-5, 2-Phenylpyridine 1116-76-3, Tri-n-octylamine **193810-83-2** 330576-56-2, N-t-Butoxycarbonyldicyclohexylamine 406198-67-2
(acid diffusion control agent; radiation sensitive resin composition for **photoresist** containing)

IT 66003-78-9, Triphenylsulfoniumtrifluoromethanesulfonate 84563-54-2, Bis(4-tert-butylphenyl)iodonium trifluoromethanesulfonate 133710-62-0 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 185195-30-6D, Bis(4-tert-butylphenyl)iodonium 10-camphorsulfonate, reaction product with Et vinyl ether 194999-85-4 205514-94-9, N-(10-Camphorsulfonyloxy)succinimide 406198-76-3 406198-77-4
(acid generator; radiation sensitive resin composition for **photoresist** containing)

IT 542-92-7, Cyclopentadiene, reactions 2680-03-7, N,N-Dimethylacrylamide
(preparation of radiation sensitive resin composition for **photoresist**)

IT 25171-46-4P
(preparation of radiation sensitive resin composition for **photoresist**)

IT 109-92-2DP, Ethyl vinyl ether, reaction product with poly(hydroxystyrene) 928-55-2DP, Ethyl-1-propenyl ether, reaction product with poly(hydroxystyrene) 2182-55-0DP, Cyclohexyl vinyl ether, reaction product with poly(hydroxystyrene) 24979-70-2DP, Poly(p-hydroxystyrene), reaction product with Et vinyl ether and Et propenyl ether 24979-70-2DP, Poly(p-hydroxystyrene), reaction product with di-Bu carbonate 34619-03-9DP, Di-tert-butyl carbonate, reaction product with poly(hydroxystyrene) 95418-60-3DP, Poly (p-tert-Butoxystyrene), hydrolyzed, and/or reaction product with cyclohexyl vinyl ether

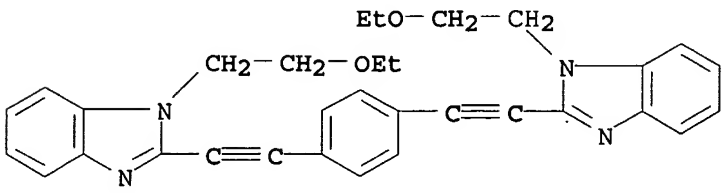
123589-22-0DP, p-tert-Butoxystyrene-p-hydroxystyrene copolymer, reaction product with Et vinyl ether 221524-18-1DP, reaction product with Et vinyl ether 221549-67-3DP, hydrolyzed 340964-44-5P 357167-14-7P 406198-55-8DP, hydrolyzed 406198-56-9DP, hydrolyzed 406198-57-0DP, hydrolyzed 406198-58-1DP, hydrolyzed 406198-60-5DP, hydrolyzed 406198-61-6DP, hydrolyzed 406198-62-7DP, hydrolyzed 406198-63-8DP, hydrolyzed 406198-64-9DP, hydrolyzed 406198-68-3P 406198-69-4P 406198-70-7P 406198-71-8P 406198-72-9P 406198-73-0P 406198-74-1P 406198-75-2P
(resin; radiation sensitive resin composition for **photoresist** containing)

L24 ANSWER 16 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:244559 HCAPLUS
DOCUMENT NUMBER: 136:286664
TITLE: Optical recording material containing azole compound and recording method
INVENTOR(S): Saito, Naoki
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002096558	A2	20020402	JP 2000-285853	2000 0920

PRIORITY APPLN. INFO.: JP 2000-285853 2000 0920

OTHER SOURCE(S): MARPAT 136:286664
AB The material comprises a support coated with a laser-recordable layer containing an azole compound A1L1mA2n [A1-2 = (substituted) azolyl; n = 1-5; L1 = (n + 1)-valent π-conjugated linkage; m = 0,1; when m = 0, n = 1; A1 and L1, A2 and L1, A1 and A2 may form a ring]. Information is recorded by irradiating laser with ≤550 nm on the material. The material is recorded and read by ≤450 nm laser beam and suited for high d. recording.
IT **405885-79-2**
(optical recording material containing azole compound)
RN 405885-79-2 HCAPLUS
CN 1H-Benzimidazole, 2,2'-(1,4-phenylenedi-2,1-ethynediyl)bis[1-(2-ethoxyethyl)- (9CI) (CA INDEX NAME)



IC ICM B41M005-26
ICS G11B007-0045; G11B007-24; C09B023-00; C09B057-00
CC 74-12 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
IT 405885-67-8 405885-71-4 405885-75-8 **405885-79-2**
405885-83-8 405885-87-2 405885-91-8
(optical recording material containing azole compound)

L24 ANSWER 17 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:918945 HCAPLUS
DOCUMENT NUMBER: 136:45683
TITLE: Radiation-sensitive resin composition for chemical amplified **resist**
INVENTOR(S): Nishimura, Yukio; Yamahara, Noboru; Yamamoto, Masafumi; Kajita, Toru; Shimokawa, Tsutomu; Ito, Hiroshi
PATENT ASSIGNEE(S): JSR Corporation, Japan; International Business Machines Corporation
SOURCE: Eur. Pat. Appl., 63 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1164434	A2	20011219	EP 2001-114503	20010615
EP 1164434	A3	20041222		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002072484	A2	20020312	JP 2001-108824	20010406
US 2002009668	A1	20020124	US 2001-879894	20010614
US 6800414	B2	20041005		
SG 100729	A1	20031226	SG 2001-3498	20010614
CN 1332205	A	20020123	CN 2001-124927	20010615
TW 536661	B	20030611	TW 2001-90114559	20010615
US 2004241580	A1	20041202	US 2004-867892	20040616
US 6964840	B2	20051115		
PRIORITY APPLN. INFO.:			JP 2000-182297 A	20000616
			JP 2001-108824 A	

2001
0406

US 2001-879894 A1
2001
0614

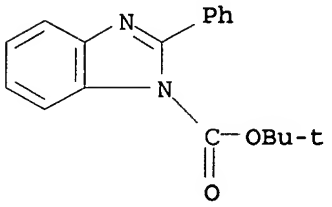
OTHER SOURCE(S): MARPAT 136:45683

AB A radiation-sensitive resin composition comprising an acid-labile group-containing resin and a photoacid generator is disclosed. The resin has a structure of X1R2COR1 (R1 = H, monovalent acid-labile group, C1-6 alkyl which does not have an acid-labile group, C2-7 alkylcarbonyl which does not have an acid-labile group; X1 = C1-4 fluorinated alkyl; and R2 = H, C1-10 alkyl, C1-10 fluorinated alkyl). The resin composition exhibits high transmittance of radiation, high sensitivity, resolution, and pattern shape, and is useful as a chemical amplified **resist** in producing semiconductors at a high yield.

IT **193810-83-2**, N-tert-Butoxycarbonyl-2-phenylbenzimidazole
(acid diffusion control agent for radiation-sensitive **resist** composition)

RN 193810-83-2 HCAPLUS

CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004
ICS G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76

ST chem amplified radiation electron beam **photoresist** microfabrication

IT **Photoresists**
(acid-labile group-containing resin for radiation-sensitive **resist** composition)

IT Polyalkenamers
(acid-labile group-containing resin for radiation-sensitive **resist** composition)

IT Semiconductor device fabrication
(radiation-sensitive **resist** composition for)

IT 1116-76-3, Tri-n-octylamine 2052-49-5, Tetra-n-butylammoniumhydroxide 4847-93-2, 3-Piperidino-1,2-propanediol **193810-83-2**, N-tert-Butoxycarbonyl-2-phenylbenzimidazole 330576-56-2, N-tert-Butoxycarbonyldicyclohexylamine
(acid diffusion control agent for radiation-sensitive **resist** composition)

IT 144317-44-2, Triphenylsulfonium nonafluoro-n-butanesulfonate 194999-85-4 213740-80-8 307531-76-6 330576-58-4 380886-84-0
(acid generator for radiation-sensitive **resist**

composition)

IT 370099-14-2P 370102-83-3P 380886-62-4P 380886-63-5P
380886-66-8P 380886-68-0P 380886-69-1P 380886-70-4P
380886-71-5P 380886-72-6DP, hydrogenated 380886-72-6P
380886-73-7DP, hydrogenated 380886-74-8DP, hydrogenated
380886-74-8P 380886-75-9DP, hydrogenated 380886-76-0DP,
hydrogenated 380886-76-0P 380886-77-1DP, hydrogenated
380886-78-2P 380886-79-3P 380886-80-6P 380886-81-7P
380886-82-8P 380886-83-9P 380915-67-3P
(acid-labile group-containing resin for radiation-sensitive **resist** composition)

IT 157692-53-0, tert-Butyl deoxycholate 169228-97-1, Di-tert-butyl 1,3-adamantanedicarboxylate 231296-44-9, t-Butoxycarbonylmethyldeoxycholate 296242-01-8
(alicyclic additive for radiation-sensitive **resist** composition)

IT 77-73-6, Dicyclopentadiene 542-92-7, Cyclopentadiene, reactions 646-97-9, 1,1-Bis(trifluoromethyl)-3-buten-1-ol 5292-43-3, tert-Butyl bromoacetate
(preparation of acid-labile group-containing resin for radiation-sensitive **resist** composition)

IT 196314-61-1P 196314-63-3P 365533-00-2P 380886-59-9P
380886-60-2P
(preparation of acid-labile group-containing resin for radiation-sensitive **resist** composition)

L24 ANSWER 18 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:918944 HCAPLUS
DOCUMENT NUMBER: 136:45682
TITLE: Radiation-sensitive resin composition
INVENTOR(S): Kobayashi, Eiichi; Numata, Jun; Yamachika, Mikio; Yamamoto, Masafumi
PATENT ASSIGNEE(S): JSR Corporation, Japan
SOURCE: Eur. Pat. Appl., 25 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1164433	A1	20011219	EP 2001-114245	20010612
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002072477	A2	20020312	JP 2000-177487	20000613
US 2002012872	A1	20020131	US 2001-878274	20010612
US 6506537	B2	20030114		
PRIORITY APPLN. INFO.:			JP 2000-176171 A	20000612
			JP 2000-177487 A	

2000
0613

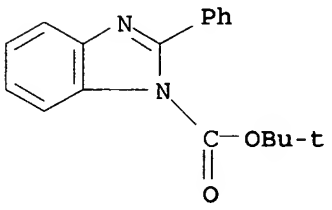
OTHER SOURCE(S): MARPAT 136:45682

AB A pos.-type radiation-sensitive resin composition is provided. The composition includes: (A) a low-mol. compound comprising a compound having at least one amino group having H bonded to N; at least one H in the amino group having been substituted with a t-butoxycarbonyl group; (B) a radiation-sensitive acid generator; and (C) a silicon-atom-containing resin comprising an alkali-insol. or alkali-slightly-soluble resin having been protected with an acid-cleavable group; the resin being capable of turning soluble in alkali upon cleavage of the acid-cleavable group. This radiation-sensitive resin composition is effectively responsive to radiations of various types, has superior sensitivity and resolution and also a superior long-term storage stability, and is useful as a pos.-type chemical amplified **resist.**

IT **193810-83-2**, N-tert-Butoxycarbonyl-2-phenylbenzimidazole
(acid diffusion control agent for radiation-sensitive resin composition)

RN 193810-83-2 HCAPLUS

CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004
ICS G03F007-075

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 38, 76

ST radiation sensitive resin chem amplified **resist**

IT **Photoresists**
(radiation-sensitive resin composition for)

IT 151476-40-3, N-t-Butoxycarbonyl-1-adamantylamine
193810-83-2, N-tert-Butoxycarbonyl-2-phenylbenzimidazole
197144-31-3 330576-56-2, N-t-Butoxycarbonyldicyclohexylamine
353275-42-0
(acid diffusion control agent for radiation-sensitive resin composition)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 19 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:900258 HCAPLUS

DOCUMENT NUMBER: 136:29177

TITLE: Radiation-sensitive resin composition for chemical amplified pos. tone **resist**

INVENTOR(S): Nishimura, Yukio; Douki, Katsuji; Kajita, Toru; Shimokawa, Tsutomu

PATENT ASSIGNEE(S): JSR Corporation, Japan

SOURCE: Eur. Pat. Appl., 54 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1162506	A1	20011212	EP 2001-113944	20010607
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002062657	A2	20020228	JP 2001-95877	20010329
US 2002009667	A1	20020124	US 2001-874977	20010607
US 6753124	B2	20040622		

PRIORITY APPLN. INFO.: JP 2000-173708 A 20000609
JP 2001-95877 A 20010329

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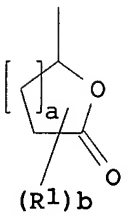
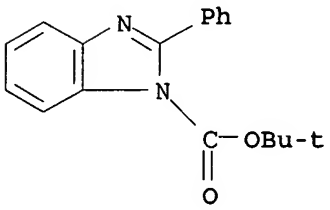


I

AB A radiation-sensitive resin composition used as a chemical amplified pos. tone **resist** responsive to short wavelength active radiation such as KrF excimer laser and ArF excimer laser is disclosed. The resin composition comprises: (A) an acid-dissociable group-containing resin which is insol. or scarcely soluble in alkali and becomes alkali soluble when the acid-dissociable group dissocs., the resin comprising a lactone cyclic structure I (a = 1-3; b = 0-9; R1 = monovalent organic group); and (B) a photoacid generator. The composition has high transmittance of radiation, exhibits high sensitivity, resolution, and pattern shape, and can produce semiconductors at a high yield without producing resolution defects during microfabrication.

IT **193810-83-2**, N-tert-Butoxycarbonyl-2-phenylbenzimidazole
(acid diffusion control agent; radiation-sensitive resin composition for chemical amplified pos. tone **resist**)

RN 193810-83-2 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST chem amplified **photoresist** acid dissociable lactone cyclic
IT Positive **photoresists**
(radiation-sensitive resin composition for)
IT 1116-76-3, Tri-n-octylamine 3033-62-3, Bis(2-dimethylaminoethyl)ether **193810-83-2**, N-tert-Butoxycarbonyl-2-phenylbenzimidazole 330576-56-2, N-tert-Butoxycarbonyldicyclohexylamine
(acid diffusion control agent; radiation-sensitive resin composition for chemical amplified pos. tone **resist**)
IT 157692-53-0, tert-Butyl deoxycholate 169228-97-1, Di-tert-butyl 1,3-adamantanedicarboxylate 231296-44-9, t-Butoxycarbonylmethyl deoxycholate 296242-01-8, 2,5-Dimethyl-2,5-di(1-adamantylcarbonyloxy)hexane
(additives; radiation-sensitive resin composition for chemical amplified pos. tone **resist**)
IT 542-92-7, Cyclopentadiene, reactions 814-68-6, Acryloyl chloride 920-46-7, Methacryloyl chloride 34862-06-1, 4,5-Diacetoxypentanal 78984-88-0
(preparation of radiation-sensitive resin composition for chemical amplified pos. tone **resist**)
IT 10374-51-3P, 4-Hydroxymethyl-γ-butyrolactone 156938-09-9P 259154-20-6P, 4,5-Diacetoxypentanoic acid 264193-11-5P 379257-66-6P 379257-68-8P 379257-69-9P 379257-70-2P
(preparation of radiation-sensitive resin composition for chemical amplified pos. tone **resist**)
IT 379257-71-3P 379257-72-4P 379257-73-5P 379257-75-7P 379257-76-8P 379257-77-9P 379257-78-0P 379257-79-1P 379257-81-5P 379257-82-6P 379257-83-7P
(radiation-sensitive resin composition for chemical amplified pos. tone **resist**)
IT 96-48-0, γ-Butyrolactone 108-94-1, Cyclohexanone, uses 110-43-0, 2-Heptanone 84540-57-8, Propylene glycol monomethyl ether acetate
(solvent; radiation-sensitive resin composition for chemical amplified pos. tone **resist**)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 20 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:581559 HCAPLUS

DOCUMENT NUMBER: 135:160153
TITLE: Radiation-sensitive resin composition
INVENTOR(S): Numata, Jun; Suzuki, Aki; Hara, Hiromichi; Natsume, Norihiro; Murata, Kiyoshi; Yamamoto, Masafumi; Soyano, Akimasa; Kajita, Toru; Shimokawa, Tsutomu
PATENT ASSIGNEE(S): JSR Corp., Japan
SOURCE: Eur. Pat. Appl., 77 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1122605	A2	20010808	EP 2001-102326	2001 0201
EP 1122605	A3	20010919		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001215689	A2	20010810	JP 2000-28456	2000 0204
JP 2002082438	A2	20020322	JP 2000-273962	2000 0908
US 2001023050	A1	20010920	US 2001-774714	2001 0201
US 6623907	B2	20030923		
SG 90230	A1	20020723	SG 2001-565	2001 0205
PRIORITY APPLN. INFO.:			JP 2000-28456 A	2000 0204
			JP 2000-273962 A	2000 0908

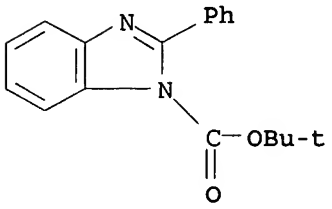
AB The invention relates to a pos.- or neg.-tone radiation sensitive resin composition suitable as a **resist** for ultra-microprocessing using UV, deep-UV, x-ray radiation and charged particle rays. A pos. tone radiation-sensitive resin composition containing (a) a low mol. weight compound having at least one amino group in which the nitrogen atom has at least one hydrogen atom bonded thereto and at least one of the hydrogen atoms is replaced by a tert-butoxycarbonyl group, (b) a photoacid generator and (c) a resin insol. or scarcely soluble in alkali which is protected by an acid-soluble group and becomes soluble in alkali when the acid-dissociating group dissocs. or an alkali-soluble resin and an alkali solubility control agent, is disclosed. Also disclosed is a neg.-tone radiation sensitive resin composition comprising a low mol. weight compound, a photoacid generator, and an alkali-soluble resin, and a compound capable of crosslinking with alkali-soluble resin in the presence of an acid. The composition is useful as a chemical amplified **resist**

which effectively responds to various radiations, exhibits superior sensitivity and resolution, forms fine patterns at a high precision and in a stable manner even if the patterns are isolated line patterns.

IT **193810-83-2**
(acid-diffusion control agent; pos.-tone radiation-sensitive resin composition containing acid-diffusion control agent of)

RN 193810-83-2 HCAPLUS

CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004
ICS G03F007-038; G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

ST radiation resin neg pos tone **resist**

IT **Resists**
(chemical amplified; pos.-tone radiation-sensitive resin composition containing alkali-soluble acid-dissociating group containing polymer)

IT **Photoresists**
(pos.-tone radiation-sensitive resin composition containing alkali-soluble acid-dissociating group containing polymer)

IT 59255-81-1 151476-40-3 **193810-83-2** 330576-56-2 353275-42-0
(acid-diffusion control agent; pos.-tone radiation-sensitive resin composition containing acid-diffusion control agent of)

L24 ANSWER 21 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:208019 HCAPLUS

DOCUMENT NUMBER: 134:245232

TITLE: Radiation-sensitive resin composition as chemically-amplified **photoresist** with superior dry etching **resistance** and resolution for deep UV lithography

INVENTOR(S): Douki, Katsuji; Murata, Kiyoshi; Ishii, Hiroyuki; Kajita, Toru; Shimokawa, Tsutomu

PATENT ASSIGNEE(S): JSR Corporation, Japan

SOURCE: Eur. Pat. Appl., 52 pp.
CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1085379	A1	20010321	EP 2000-120000	2000 0914

EP 1085379 B1 20060104
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY
JP 2001109157 A2 20010420 JP 1999-291291 1999 1013
JP 2001209181 A2 20010803 JP 2000-277966 2000 0913
US 6482568 B1 20021119 US 2000-662160 2000 0914
PRIORITY APPLN. INFO.: JP 1999-264110 A 1999 0917
JP 1999-291291 A 1999 1013
JP 1999-325222 A 1999 1116

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

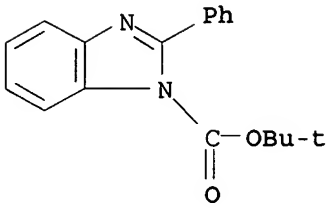
AB A radiation-sensitive resin composition comprises (a) a resin containing an acid-dissociable group which is insol. or scarcely soluble in alkali and becomes alkali soluble when the acid-dissociable group dissocs., comprising the following recurring unit I, recurring unit II, and at least one of the recurring units III and IV (A, B = H, C1-4-alkyl; X, Y = H, monovalent O or N containing polar group, X joining together with Y may form dicarboxylic anhydride group; n = 0-2; R1 = H, CH3; R2 = CR33; R3 = monovalent alicyclic hydrocarbon group having 4-20 carbon atoms, its derivative, C1-4-alkyl; R4 = divalent hydrocarbon group having alicyclic skeleton containing 3-15 carbons), (b) a photoacid generator, (c) an acid diffusion controller, and (d) alicyclic additive. The radiation-sensitive resin composition is suitable for use as a chemical-amplified **resist** showing sensitivity to active radiation such as deep UV rays represented by a KrF excimer laser or ArF excimer laser, exhibiting superior dry etching **resistance** without being affected by types of etching gas, having high radiation transmittance, exhibiting excellent basic characteristics as a **resist** such as sensitivity, resolution, and pattern shape, possessing excellent storage stability as a composition, and exhibiting sufficient adhesion to substrates.

IT **193810-83-2**
(acid diffusion controller; copolymer compns. as chemical-amplified **photoresist** with superior dry etching **resistance**, sensitivity and resolution properties for deep UV lithog.)

RN 193810-83-2 HCAPLUS

CN 1H-Benzimidazole-1-carboxylic acid, 2-phenyl-, 1,1-dimethylethyl

ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 38
ST chem amplified **photoresist** polymer prepn compn deep UV lithog; dry etching **resistance** sensitivity resoln chem amplified **photoresist** polymer
IT **Photoresists**
(UV; copolymer compns. as chemical-amplified **photoresist** with superior dry etching **resistance**, sensitivity and resolution properties for deep UV lithog.)
IT 103-76-4, 1-(2-Hydroxyethyl)piperazine 611-36-9, 4-Hydroxyquinoline 1116-76-3, Tri-n-octylamine 3033-62-3, Bis(2-dimethylaminoethyl)ether 7560-83-0, Methyldicyclohexylamine **193810-83-2** 330576-56-2
(acid diffusion controller; copolymer compns. as chemical-amplified **photoresist** with superior dry etching **resistance**, sensitivity and resolution properties for deep UV lithog.)
IT 330576-37-9P 330576-38-0P 330576-39-1P 330576-41-5P 330576-42-6P 330576-43-7P 330576-44-8P 330576-46-0P 330576-47-1P 330576-48-2P 330576-49-3P 330576-51-7P 330576-52-8P 330576-54-0P 330576-55-1P
(copolymer compns. as chemical-amplified **photoresist** with superior dry etching **resistance**, sensitivity and resolution properties for deep UV lithog.)
IT 498-66-8D, Bicyclo[2.2.1]hept-2-ene, imide derivs. 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate 144317-44-2, Triphenylsulfonium nonafluoro-n-butanesulfonate 194999-85-4 209482-18-8 330576-58-4
(photoacid generator; copolymer compns. as chemical-amplified **photoresist** with superior dry etching **resistance**, sensitivity and resolution properties for deep UV lithog.)
IT 157692-53-0, tert-Butyl deoxycholate 169228-97-1 231296-44-9, t-Butoxycarbonylmethyl deoxycholate
(**resist** additive; copolymer compns. as chemical-amplified **photoresist** with superior dry etching **resistance**, sensitivity and resolution properties for deep UV lithog.)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 22 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:208013 HCAPLUS
DOCUMENT NUMBER: 134:229662
TITLE: Photographic material containing a novel

hydrazide type

INVENTOR(S): Loccufier, Johan; Lingier, Stefaan; Meeus, Pascal

PATENT ASSIGNEE(S): Agfa-Gevaert N.V., Belg.

SOURCE: Eur. Pat. Appl., 23 pp.
CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

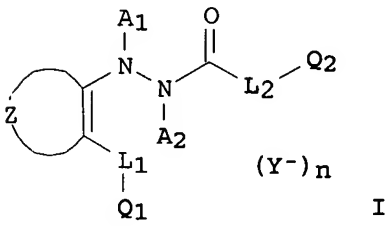
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1085371	A1	20010321	EP 1999-203011	19990915
EP 1085371	B1	20030806		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6361920	B1	20020326	US 2000-661245	20000913
JP 2001109094	A2	20010420	JP 2000-279567	20000914

PRIORITY APPLN. INFO.: EP 1999-203011 A 19990915

US 1999-155333P P 19990922

OTHER SOURCE(S): MARPAT 134:229662

GI

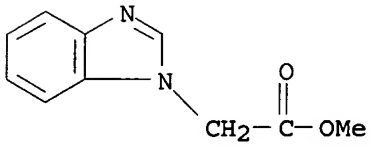


I

AB The invention relates to a high contrast photog. materials with improved properties and to a novel class of nucleating agents contained in them. The material contains a hydrazide represented by (I), where L1 = divalent linking chain, Q1 = cationic heterocyclic ring containing N, L2 = divalent linking group, A1 and A2 = H or a group yielding H, and Y = anion. The material is preferably a graphic arts material for pre-press applications. High gradation and excellent dot quality, exposure latitude and stability on continuous processing are obtained.

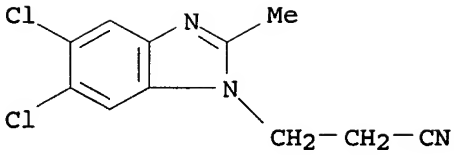
IT **19809-30-4**
(synthesis of oxalyl-amide hydrazide for photog. material

containing novel hydrazide using)
RN 19809-30-4 HCAPLUS
CN 1H-Benzimidazole-1-acetic acid, methyl ester (9CI) (CA INDEX NAME)



IC ICM G03C001-06
ICS C07D213-42; C07D215-12; C07D401-12; C07F009-58; C07F009-60; C07F009-62
CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
IT 552-89-6, 2-Nitrobenzaldehyde 3731-53-1, 4-Aminomethylpyridine **19809-30-4** 25023-22-7
(synthesis of oxalyl-amide hydrazide for photog. material containing novel hydrazide using)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 23 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:655531 HCAPLUS
DOCUMENT NUMBER: 132:4060
TITLE: Synthesis of a hydrophobic benzimidotricarbocyanine dye
AUTHOR(S): Kharitonova, O. V.; Abramov, A. A.; Zhidkoblinova, I. N.
CORPORATE SOURCE: Mosk. Gos. Akad. Tonkoi Khimicheskoi Tekhnologii im. Lomonosova, Moscow, Russia
SOURCE: Zhurnal Nauchnoi i Prikladnoi Fotografii (1999), 44(4), 38-43
CODEN: ZNPFEK; ISSN: 0869-6144
PUBLISHER: Nauka
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Condensation of 3-carboxyethyl-2-methyl-1-octyl-5,6-dichlorobenzimidazolium bromide with [5-(N-methyl-N-phenylamino)-3-octyl-2,4-pentadienylidene]-N-methyl-N-phenylammonium chloride yielded 3,3'-carboxyethyl-1,1',11-trioctyl-5,5',6,6'-tetrachlorobenzimidotricarbocyanine sodium salt. A pentamethine salt was synthesized reacting 1,1,5,5-tetraethoxy-3-octyl-3-pentanol with N-methylaniline hydrochloride in alc. under short-term boiling.
IT **251094-98-1P**
(synthesis of a hydrophobic benzimidotricarbocyanine dye)
RN 251094-98-1 HCAPLUS
CN 1H-Benzimidazole-1-propanenitrile, 5,6-dichloro-2-methyl- (9CI) (CA INDEX NAME)



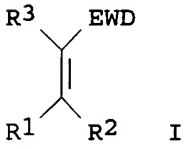
CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and **Photographic** Sensitizers)
IT 171193-68-3P **251094-98-1P** 251094-99-2P 251095-00-8P 251095-01-9P
(synthesis of a hydrophobic benzimidotricarbocyanine dye)

L24 ANSWER 24 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:405517 HCAPLUS
DOCUMENT NUMBER: 129:128903
TITLE: Heat-developable photographic recording material for plate making
INVENTOR(S): Yamada, Kozaburo; Kubo, Toshiaki; Suzuki, Hiroyuki
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 71 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

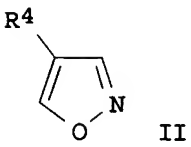
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10161270	A2	19980619	JP 1997-240511	1997 0821

PRIORITY APPLN. INFO.: JP 1996-279957 A 1996 1001

GI



I



II

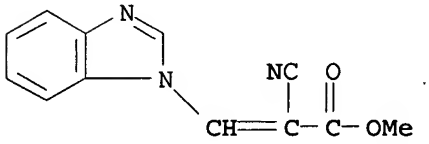
AB In the title recording material having ≥1 image-forming layer, a specified hydrazine derivative and a compound I and/or II (R1-3 = H, monovalent substitute; EDW = electron attracting group; R4 =

monovalent substitute) are incorporated. The invention recording material can be developed in dry process and is useful for photog. plate making.

IT **210360-51-3**
(combined with specified hydrazine derivative for heat-developable photog. material)

RN 210360-51-3 HCAPLUS

CN 2-Propenoic acid, 3-(1H-benzimidazol-1-yl)-2-cyano-, methyl ester (9CI) (CA INDEX NAME)



IC ICM G03C001-498
ICS G03C001-498

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

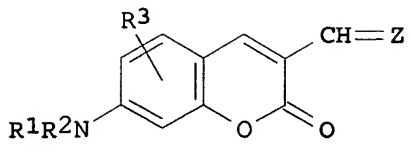
IT 94-05-3 4432-64-8 5515-12-8 15166-81-1 61310-53-0 62701-44-4 68776-58-9, 4-Isoxazolecarbonitrile 76196-81-1 189154-57-2 189154-59-4 191489-55-1 210360-47-7 210360-48-8 210360-49-9 210360-50-2 **210360-51-3** 210360-52-4 210363-29-4
(combined with specified hydrazine derivative for heat-developable photog. material)

L24 ANSWER 25 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:112700 HCAPLUS
DOCUMENT NUMBER: 128:210864
TITLE: Coumarin compound as photosensitizer and its use in visible ray-curable ink or **resist**
INVENTOR(S): Suzuki, Rihoko; Otsuji, Akio; Urakami, Tatsunobu; Takuma, Keisuke
PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

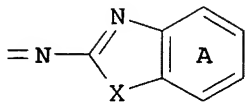
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10045741	A2	19980217	JP 1996-209756	19960808

PRIORITY APPLN. INFO.: JP 1996-209756 19960808

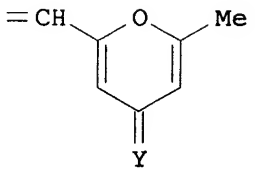
OTHER SOURCE(S): MARPAT 128:210864
GI



I



II



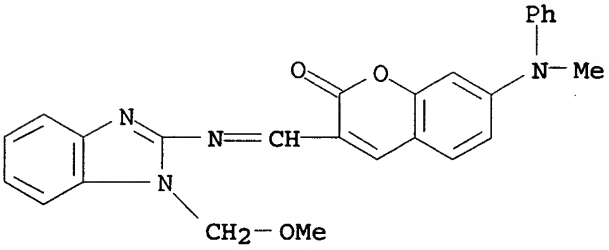
III

AB The coumarins are represented as I [R1, R2 = H, alkyl, aryl, alkenyl, aralkyl, alkoxyalkyl, aryloxyalkyl, alkenyloxyalkyl, hydroxyalkyl, Q1[O(CH2)p]q; Q1 = H, alkyl, hydroxyalkyl, hydroxyalkoxyalkyl, alkoxyalkyl, cycloalkyl; p, q = 1-5; R1 and R2 may form ring optionally together with amino-substituted benzene ring; R3 = H, halogen, alkyl, alkoxyalkyl, hydroxyalkyl, halogenoalkyl, OH, alkoxy, aryloxy, alkoxyalkoxy, alklthio, arylthio, sulfonate salt group; Z = heterocycle group II, pyrone-type group III; X = O, S, NH, NR4; R4 = alkyl, aryl, aralkyl, alkoxyalkyl, aryloxyalkyl, alkenyloxyalkyl, Q1[O(CH2)p]q; II may be substituted; Y = O, :C(CN)2]. A photosensitizer containing I, a visible ray-sensitive resin composition containing I, visible ray-sensitive ink containing I and a solvent, and visible ray-sensitive material having the resin composition on a substrate, i.e., **photoresist**, are also claimed.

IT **203855-16-7 203855-23-6**
(coumarin derivs. as photosensitizers for visible ray-sensitive inks or **resists**)

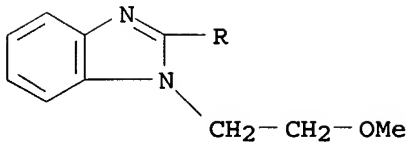
RN 203855-16-7 HCAPLUS

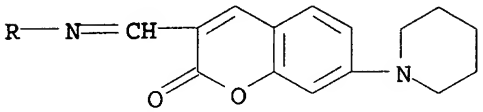
CN 2H-1-Benzopyran-2-one, 3-[[[1-(methoxymethyl)-1H-benzimidazol-2-yl]imino]methyl]-7-(methylphenylamino)- (9CI) (CA INDEX NAME)



RN 203855-23-6 HCAPLUS

CN 2H-1-Benzopyran-2-one, 3-[[[1-(2-methoxyethyl)-1H-benzimidazol-2-yl]imino]methyl]-7-(1-piperidinyl)- (9CI) (CA INDEX NAME)





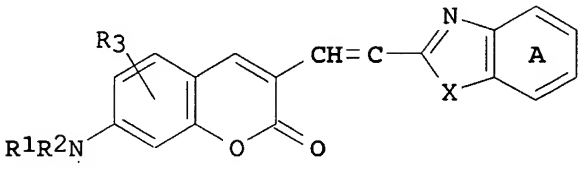
IC ICM C07D311-16
ICS C07D405-12; C07D407-06; C07D413-12; C07D417-12; C07D491-06; C08F002-50; C08K005-18; C08L101-00; C09D011-00
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 27
ST coumarin compd visible ray sensitizer; ink visible ray sensitive photosensitizer; **photoresist** visible ray sensitive photosensitizer
IT **Photoresists**
(coumarin derivs. as photosensitizers for visible ray-sensitive inks or **resists**)
IT Inks
(photocurable; coumarin derivs. as photosensitizers for visible ray-sensitive inks or **resists**)
IT 203855-12-3P 203855-13-4P
(coumarin derivs. as photosensitizers for visible ray-sensitive inks or **resists**)
IT 15625-89-5, Trimethylolpropane triacrylate 203855-14-5
203855-15-6 **203855-16-7** 203855-17-8 203855-18-9
203855-19-0 203855-20-3 203855-21-4 203855-22-5
203855-23-6 203855-24-7 203855-25-8 203855-26-9
203855-27-0 203855-28-1 203855-29-2 203855-30-5
203855-31-6 203855-32-7 203855-33-8 203855-34-9
203855-35-0 203855-37-2, Benzyl methacrylate-4-hydroxyphenyl methacrylate-methacrylic acid-methyl methacrylate copolymer
203856-95-5
(coumarin derivs. as photosensitizers for visible ray-sensitive inks or **resists**)

L24 ANSWER 26 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:59384 HCAPLUS
DOCUMENT NUMBER: 128:161009
TITLE: Visible ray-sensitive resin compositions, inks, photosensitive materials, coumarin compounds, and photosensitizers thereof
INVENTOR(S): Suzuki, Rioko; Otsuji, Atsuo; Uragami, Tatsunobu; Takuma, Keisuke
PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10017604	A2	19980120	JP 1996-172610	19960702
JP 3739136	B2	20060125		
JP 2005320338	A2	20051117	JP 2005-148984	20050523
PRIORITY APPLN. INFO.:			JP 1996-172610 A3	19960702

OTHER SOURCE(S): MARPAT 128:161009

GI



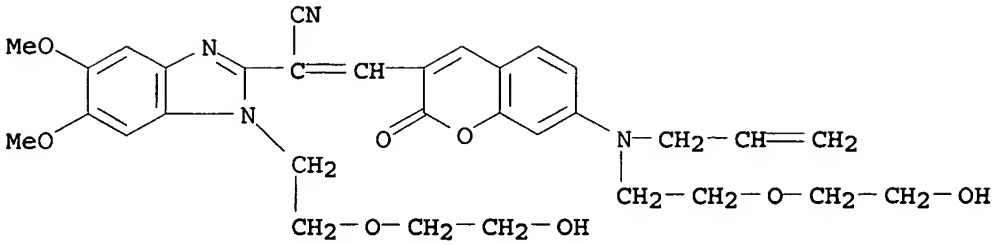
I

AB The visible ray-sensitive resin compns. contain (A) crosslinkable or polymerizable compds. with ethylenically unsatd. double bonds and (B) photopolymn. initiator compds. containing titanocenes and coumarines I [R1, R2 = H, (substituted) alkyl, aryl, alkenyl, aralkyl, Q1[O(CH2)p]q; Q1 = H, (substituted) alkyl; p, q = 1-5; R1, R2 may be bonded together or bonded with the amino-substituted benzene ring to form a ring; R3 = H, halo, (substituted) alkyl, OH, alkoxy, aryloxy, alkoxyalkoxy, alkylthio, arylthio, SO3H; X = O, S, NH, NR4; R4 = (substituted) alkyl, aryl, aralkyl, Q2[O(CH2)m]n; Q2 = H, (substituted) alkyl; m, n = 1-5; ring-A may be substituted]. The inks contain the visible ray-sensitive resin compns. and solvents. The materials have the visible ray-sensitive resin compns. on substrates. The coumarin compds. and photosensitizers containing the coumarin compds. are also claimed. The compns. have excellent sensitivity to visible rays, especially Ar laser and YAG laser.

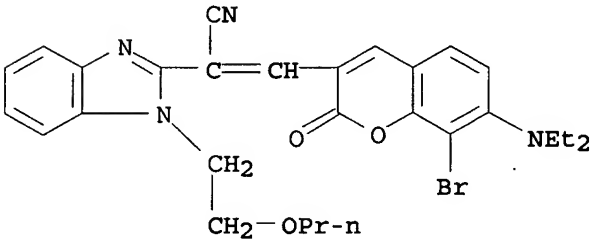
IT **202740-01-0 202740-04-3 202740-14-5 202740-18-9**
(photosensitizer; **photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)

RN 202740-01-0 HCAPLUS

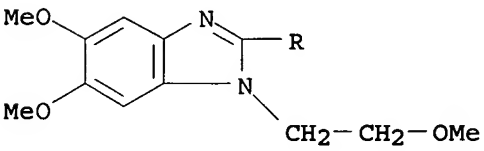
CN 1H-Benzimidazole-2-acetonitrile, 1-[2-(2-hydroxyethoxy)ethyl]-α-[[7-[[2-(2-hydroxyethoxy)ethyl]-2-propenylamino]-2-oxo-2H-1-benzopyran-3-yl]methylene]-5,6-dimethoxy- (9CI) (CA INDEX NAME)

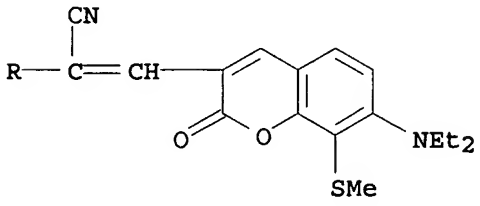


RN 202740-04-3 HCAPLUS
CN 1H-Benzimidazole-2-acetonitrile, α-[[8-bromo-7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]methylene]-1-(2-propoxyethyl)- (9CI) (CA INDEX NAME)

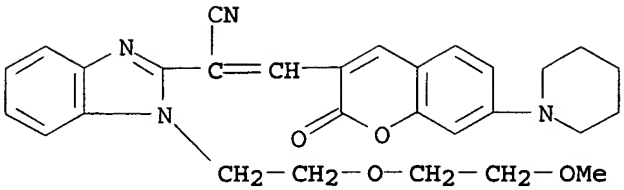


RN 202740-14-5 HCAPLUS
CN 1H-Benzimidazole-2-acetonitrile, α-[[7-(diethylamino)-8-(methylthio)-2-oxo-2H-1-benzopyran-3-yl]methylene]-5,6-dimethoxy-1-(2-methoxyethyl)- (9CI) (CA INDEX NAME)

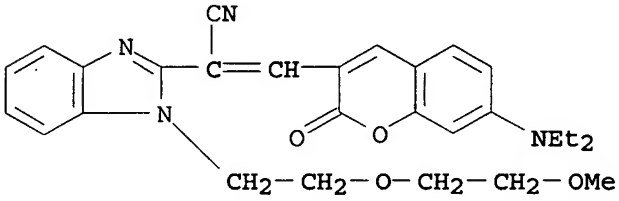




RN 202740-18-9 HCAPLUS
CN 1H-Benzimidazole-2-acetonitrile, 1-[2-(2-methoxyethoxy)ethyl]-α-[[2-oxo-7-(1-piperidinyl)-2H-1-benzopyran-3-yl]methylene]- (9CI) (CA INDEX NAME)



IT **202739-79-5P**
(photosensitizer; **photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)
RN 202739-79-5 HCAPLUS
CN 1H-Benzimidazole-2-acetonitrile, α-[[7-(diethylamino)-2-oxo-2H-1-benzopyran-3-yl]methylene]-1-[2-(2-methoxyethoxy)ethyl]-(9CI) (CA INDEX NAME)



IC ICM C08F002-50
ICS G03F007-027; G03F007-029; G03F007-031; C07D405-06; C07D413-06; C07D417-06; C07D491-052; C07D498-16
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
ST visible ray sensitive **resist** coumarin photosensitizer; titanocene coumarin photosensitizer photopolymn initiator **resist**; **photoresist** titanocene coumarin photosensitizer photopolymn initiator
IT Photosensitizers (pharmaceutical)
(coumarins; **photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)
IT Polymerization catalysts
(photopolymn.; **photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)
IT **Photoresists**
(**photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)
IT 125051-32-3
(photopolymn. initiator; **photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)
IT 168027-11-0P 200293-15-8P 202740-24-7P 202740-25-8P 202740-26-9P
(**photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)
IT 178253-67-3
(**photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)
IT 105-53-3, Diethyl malonate 50586-80-6 56278-50-3, 2-Benzothiazoleacetonitrile 57597-64-5, 3-Formyl-7-diethylaminocoumarin 136803-42-4

(**photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)

IT 15625-89-5, Trimethylolpropane triacrylate
(**photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)

IT 202739-81-9 202739-82-0 202739-83-1 202739-84-2
202739-85-3 202739-86-4 202739-87-5 202739-88-6
202739-89-7 202739-90-0 202739-91-1 202739-92-2
202739-93-3 202739-94-4 202739-95-5 202739-96-6
202739-97-7 202739-98-8 202739-99-9 202740-00-9
202740-01-0 202740-02-1 202740-03-2
202740-04-3 202740-05-4 202740-06-5 202740-07-6
202740-08-7 202740-09-8 202740-10-1 202740-11-2
202740-12-3 202740-13-4 **202740-14-5** 202740-15-6
202740-16-7 202740-17-8 **202740-18-9** 202740-19-0
202740-20-3 202740-21-4 202740-22-5 202740-23-6
(photosensitizer; **photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)

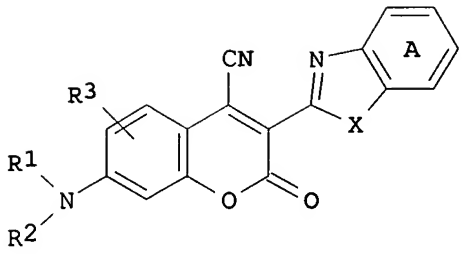
IT **202739-79-5P** 202739-80-8P
(photosensitizer; **photoresists** containing coumarins and titanocenes and their inks and photosensitive materials)

L24 ANSWER 27 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:732348 HCAPLUS
DOCUMENT NUMBER: 128:68505
TITLE: Coumarin compound, photosensitizers containing and visible light-sensitive resin compositions, containing them, and their uses
INVENTOR(S): Suzuki, Rihoko; Otsuji, Atsuo; Uragami, Tatsunobu; Takuma, Hirosuke
PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09291087	A2	19971111	JP 1996-105126	1996 0425

PRIORITY APPLN. INFO.: JP 1996-105126 1996 0425

GI



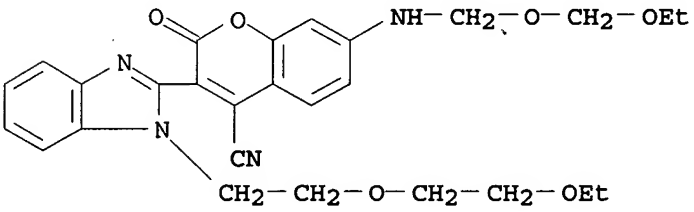
I

AB The coumarin compds. are represented by a structure I [R1-2 = (un)substituted alkyl; Q1[O(CH2)m]n; Q1 = H, (un)substituted alkyl, cycloalkyl; m, n = 1-5; NR1R2 may be a ring; R3 = H, halo, (un)substituted alkyl, halo, alkoxy, aryloxy, alkoxyalkoxy, alkylthio, arylthio, SO2H; X = O, S, NH, NR4; ring A may be substituted; R4 = (un)substituted alkyl, polyether, hydroxypolyether]. Also claimed are photosensitizers containing I, visible light-sensitive compns. containing the photosensitizers, inks for visible light-sensitive materials containing the compns. and solvents, and visible light-sensitive materials comprising a substrate and the compns. I have good solubility in solvents, thus providing a smooth uniform coating process film on a substrate, and are useful for **resists** sensitive to Ar laser radiation and YAG laser radiation and for electrodeposition coating process.

IT **200293-35-2DP**, N-alkyl amino derivs. **200293-40-9P**
(prepared as photosensitizers for visible light-sensitive **resists**)

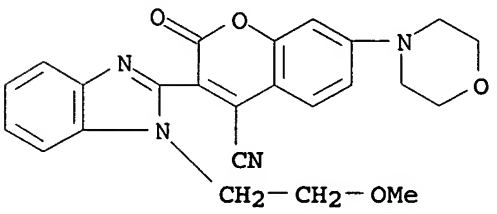
RN 200293-35-2 HCAPLUS

CN 2H-1-Benzopyran-4-carbonitrile, 3-[1-[2-(2-ethoxyethoxy)ethyl]-1H-benzimidazol-2-yl]-7-[[(ethoxymethoxy)methyl]amino]-2-oxo- (9CI) (CA INDEX NAME)



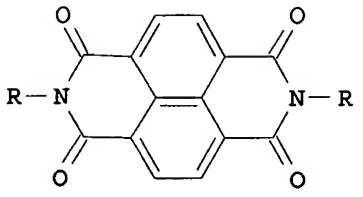
RN 200293-40-9 HCAPLUS

CN 2H-1-Benzopyran-4-carbonitrile, 3-[1-(2-methoxyethyl)-1H-benzimidazol-2-yl]-7-(4-morpholinyl)-2-oxo- (9CI) (CA INDEX NAME)

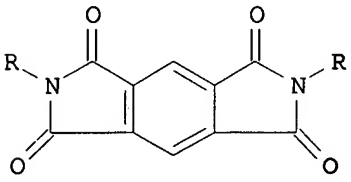


IC ICM C07D405-04
ICS C07D413-04; C07D417-04; C09D007-12; C09D011-02; C09K003-00; G03F007-031; C07D405-04; C07D235-12; C07D311-16; C07D263-56; C07D277-66
CC 74-5 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
ST coumarin deriv prepn **resist** photosensitizer; visible light **resist** coumarin deriv prepn; aminocoumarin deriv prepn visible light **resist**
IT **Photoresists**
(containing aminocoumarin derivative as photosensitizer)
IT Photosensitizers (pharmaceutical)
(containing aminocoumarin derivs. for visible light-sensitive **resist**)
IT Electrodeposition
(using **photoresist** containing aminocoumarin derivative as photosensitizer)
IT 200293-18-1P 200293-20-5P 200293-21-6P 200293-22-7P
200293-23-8P 200293-24-9P 200293-25-0P 200293-26-1P
200293-27-2P 200293-28-3P 200293-29-4P 200293-30-7P
200293-31-8P 200293-32-9P 200293-33-0P 200293-34-1P
200293-35-2DP, N-alkyl amino derivs. 200293-36-3P
200293-37-4P 200293-38-5P 200293-39-6P **200293-40-9P**
(prepared as photosensitizers for visible light-sensitive **resists**)
IT 200293-15-8P 200293-16-9P 200293-17-0P
(prepared for preparation of aminocoumarin derivs. as photosensitizers for visible light-sensitive **resists**)
IT 56278-50-3, 2-Benzothiazolylacetonitrile 136803-42-4
200293-19-2
(preparation of aminocoumarin derivs. as photosensitizers for visible light-sensitive **resists**)

L24 ANSWER 28 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:380149 HCAPLUS
DOCUMENT NUMBER: 127:89735
TITLE: Synthesis and photoinduced electron transfer processes in Ru(II)(bpy)2/Os(III)(bpy)2-based triad complexes containing functionalized diimide ligands
AUTHOR(S): Hossain, Md. Delower; Haga, Masa-aki; Monjushiro, Hideaki; Gholamkhass, Bobak; Nozaki, Koichi; Ohno, Takeshi
CORPORATE SOURCE: Coordination Chemistry Laboratory, Inst. Molecular Science, Okazaki, 444, Japan
SOURCE: Chemistry Letters (1997), (6), 573-574
CODEN: CMLTAG; ISSN: 0366-7022
PUBLISHER: Chemical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I



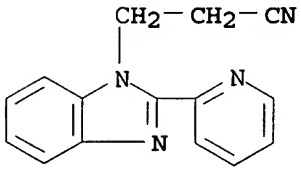
II

AB [(Bpy)2Ru(μ-L)M(bpy)2]2+ (III) (L = I and II (R = 3-(2-(2-pyridyl)benzimidazol-1-yl)propyl); M = Os(II), Ru(II)) were prepared and characterized by cyclic voltammetry. The charge separated (CS) state was efficiently formed as a result of stepwise electron transfer reactions in III (M = Os) triad system (efficiency >0.7). The rate of electron transfer and the charge separation yield were determined from picosecond time-resolved absorption spectra.

IT **34707-83-0P**
(for preparation of osmium-ruthenium and ruthenium-ruthenium pyridylbenzimidazolyldiimide dinuclear complexes)

RN 34707-83-0 HCAPLUS

CN 1H-Benzimidazole-1-propanenitrile, 2-(2-pyridinyl)- (9CI) (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 72, **74**

IT 14668-82-7P, Vinyl isocyanide **34707-83-0P** 191788-79-1P
(for preparation of osmium-ruthenium and ruthenium-ruthenium pyridylbenzimidazolyldiimide dinuclear complexes)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 29 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:50832 HCAPLUS

DOCUMENT NUMBER: 124:148723

TITLE: Phthlocyanine compounds for optical materials and electric materials

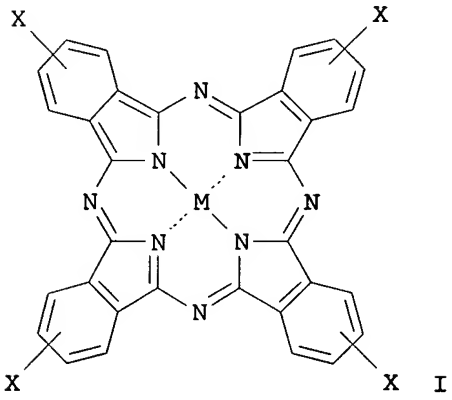
INVENTOR(S): Yashiro, Tooru; Taniguchi, Masatoshi; Narizuka, Toshiro

PATENT ASSIGNEE(S): Ricoh Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07286107	A2	19951031	JP 1994-104497	19940420

PRIORITY APPLN. INFO.: JP 1994-104497 19940420

OTHER SOURCE(S): MARPAT 124:148723
GI



I

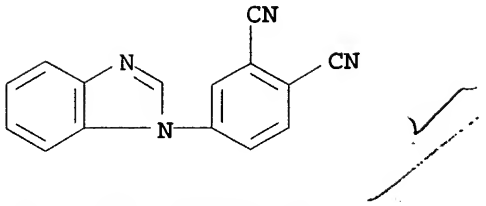
AB The compds. I (M = 2H, divalent metal, metal oxide, metal chloride; X = heterocyclyl containing ≥2 N or ≥1 N and ≥1 S on the ring; substitution positions of X = 2 or 3, 6 or 7, 10 or 11, and 14 or 15 or 1 or 4, 5 or 8, 9 or 12, and 13 or 16 positions on the phthalocyanine ring) are claimed. I show high solubility in various organic solvents at room temperature and are useful as dyes for optical recording and color filters, and for photoelec. conversion devices, electrophotog. photoreceptors, organic semiconductor devices, catalysts, gas sensors, etc. A mixture of benzimidazole, 4-nitrophthalonitrile, K2CO3, and DMSO was heated at 70° for 4 h to give 4-(1-benzimidazolyl)phthalonitrile. This was further treated with ZnCl2 and DBU in pentanol at 100° for 10 h to give tetra[β-(1-benzimidazolyl)] zinc phthalocyanine (II) with maximum absorption peak 682 nm.

IT **173286-81-2P**
(inermol. cyclocondensation of; preparation of phthalocyanine dyes having heterocyclyl group with high solubility in organic solvents)

RN 173286-81-2 HCAPLUS

CN 1,2-Benzenedicarbonitrile, 4-(1H-benzimidazol-1-yl)- (9CI) (CA

INDEX NAME)

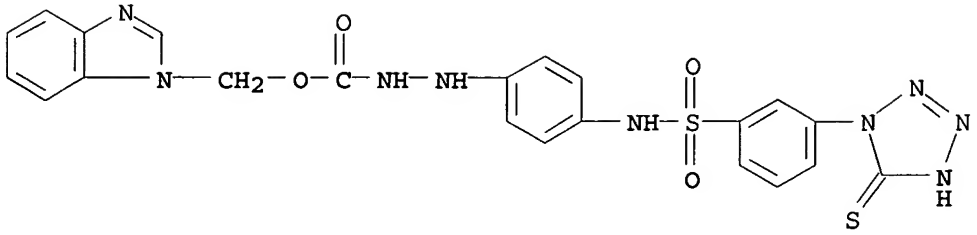


IC ICM C09B047-04
CC 41-7 (Dyes, Organic Pigments, Fluorescent Brighteners, and **Photographic** Sensitizers)
Section cross-reference(s): 73, **74**, 76
IT **173286-81-2P**
(inermol. cyclocondensation of; preparation of phthalocyanine dyes having heterocyclyl group with high solubility in organic solvents)

L24 ANSWER 30 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:680825 HCAPLUS
DOCUMENT NUMBER: 123:70225
TITLE: Silver halide photographic material and image formation
INVENTOR(S): Sanpei, Takeshi
PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 51 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07104426	A2	19950421	JP 1993-250708	1993 1006
JP 3362291	B2	20030107		
PRIORITY APPLN. INFO.:			JP 1993-250708	1993 1006

OTHER SOURCE(S): MARPAT 123:70225
AB In the title photog. material having ≥1 Ag halide emulsion layer and/or its adjacent layer containing a hydrazine derivative on 1 side of a support and ≥1 hydrophilic colloid layer on the other side of the support, the hydrophilic colloid layer contains a ≥1 nucleating accelerator. Image formation is also claimed. The photog. material is stable and free of fog and black spots.
IT **132773-86-5**
(redox compound contained in photog. material free of fog and black spot)
RN 132773-86-5 HCAPLUS
CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

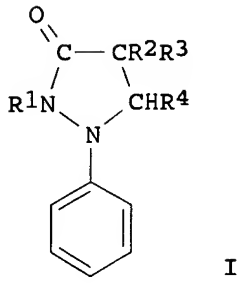
IC ICM G03C001-76
ICS G03C001-06; G03C001-295; G03C001-33; G03C001-34; G03C001-43; G03C005-29; G03C005-31
CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
IT **132773-86-5** 133682-17-4 134282-51-2 152208-74-7 164982-04-1
(redox compound contained in photog. material free of fog and black spot)

L24 ANSWER 31 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:498390 HCAPLUS
DOCUMENT NUMBER: 122:251982
TITLE: Black and white silver halide photographic material with ultra-high contrast
INVENTOR(S): Fukawa, Junichi; Sanpei, Takeshi; Goto, Kenji
PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06347939	A2	19941222	JP 1993-138705	19930610

PRIORITY APPLN. INFO.: JP 1993-138705 19930610

OTHER SOURCE(S): MARPAT 122:251982
GI



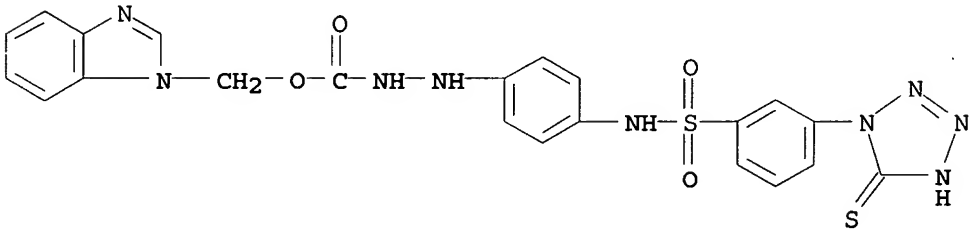
I

AB The title material contains I (R1 = H, acetyl; R2-4 = H, alkyl), polyhydroxy-benzene compds., or aminophenol compds. in a hydrophilic colloidal layer(s).

IT **132773-86-5**
(black and white silver halide photog. material with ultra-high contrast)

RN 132773-86-5 HCAPLUS

CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-34
ICS G03C001-06; G03C001-33; G03C001-42

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

IT 92-43-3, 1-Phenyl-3-pyrazolidone 95-86-3, 2,4-DiAminophenol 103-14-0, p-Benzylaminophenol 120-80-9, 2-Hydroxyphenol, uses 121-79-9, n-Propyl 3,4,5-Trihydroxybenzoate 122-87-2, n-(4-Hydroxyphenyl)glycine 123-30-8, 4-Aminophenol 123-31-9, Hydroquinone, uses 149-91-7, Benzoic acid, 3,4,5-trihydroxy-, uses 150-75-4, N-Methyl-4-Aminophenol 611-24-5, N-Methyl-2-Aminophenol 824-46-4, 2-MethoxyHydroquinone 2525-05-5, 1,2-Benzenediol, 4-butyl- 2654-57-1, 1-Phenyl-4-methyl-3-pyrazolidone 2654-58-2, 1-Phenyl-4,4-dimethyl-3-pyrazolidone 2835-96-3, 2-Methyl-4-aminophenol 2835-99-6, 3-Methyl-4-Aminophenol 13047-13-7, 1-Phenyl-4-methyl-4-hydroxymethyl-3-pyrazolidone 49865-92-1 86475-37-8, 1-Phenyl-2-acetyl-4,4-dimethyl-3-pyrazolidone 92698-99-2, 1-Phenyl-4,4-di-n-propyl-3-pyrazolidone **132773-86-5** 133805-77-3, 1,2,3-Benzenetriol, 5-methoxy- 134282-47-6 134282-51-2 146657-28-5 146657-30-9

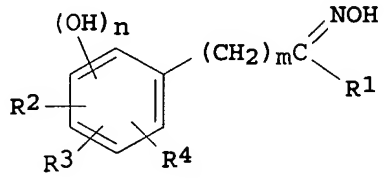
146657-31-0 152208-74-7 160744-90-1
(black and white silver halide photog. material with ultra-high contrast)

L24 ANSWER 32 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:275298 HCAPLUS
DOCUMENT NUMBER: 122:277984
TITLE: Silver halide photographic materials
INVENTOR(S): Yoshida, Kazuhiro
PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 38 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06242545	A2	19940902	JP 1993-49936	19930217

PRIORITY APPLN. INFO.: JP 1993-49936 19930217

OTHER SOURCE(S): MARPAT 122:277984
GI



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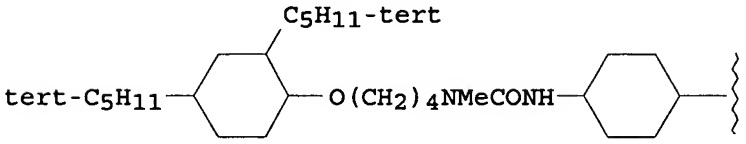

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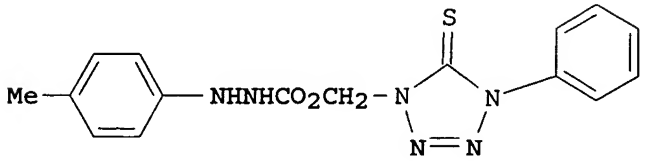


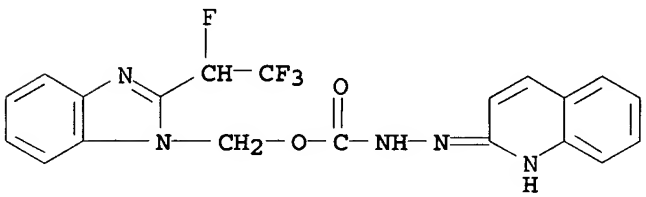
III

AB In the title photog. materials comprising a support coated with ≥1 Ag halide emulsion layer, the gelatin content on ≥1 side with the layer is ≤3.0 g/m2 and ≥1 layer contains a hydrazine derivative, a redox compound releasing a development restrainer by oxidation, and a compound I [R1 = H, alkyl, aryl, amino, OR5 (R5 = alkyl, aryl, saturated carbon ring residue); R2-4 = H, halo, alkyl, aryl, alkoxy, aryloxy, cyano, sulfo, carboxy, R2 and R3, R2 and R4, or R3 and R4 may form a ring; m = 0-3; n = 1-3]. The materials show high contrast, good dot controlling property, and storage stability, and are useful for printing platemaking. Thus, a PET film with a conductive layer and a protective layer on the back side was coated successively with a Ag(I, Br) gelatin emulsion layer containing II and o-HOC6H4CH:NOH, a 1st gelatin-based layer, a 2nd gelatin-based layer containing III, and a protective layer to give a photog. film.

IT **161069-18-7**
(photog. film containing hydrazine derivative and redox compound and oxime compound)

RN 161069-18-7 HCAPLUS

CN Hydrazinecarboxylic acid, 2-(2-quinolinyl)-, [nitro-2-(1,2,2,2-tetrafluoroethyl)-1H-benzimidazol-1-yl]methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-34
ICS G03C001-047; G03C001-06; G03C001-43

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

IT 94-67-7 1595-14-8 7470-09-9 134282-54-5 137215-47-5
138981-32-5 141303-86-8 146615-50-1 152971-97-6
154075-35-1 157761-46-1 160641-21-4 160816-94-4
160816-95-5 **161069-18-7**
(photog. film containing hydrazine derivative and redox compound and oxime compound)

L24 ANSWER 33 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:422627 HCAPLUS
DOCUMENT NUMBER: 121:22627
TITLE: Thermal transfer sheet using sublimation dye
INVENTOR(S): Eguchi, Hiroshi; Kafuku, Masaaki; Takiguchi, Ryohei
PATENT ASSIGNEE(S): Dai Nippon Printing Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 34 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

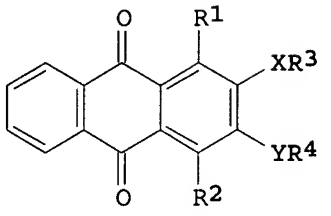
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05124364	A2	19930521	JP 1991-310199	1991 1030

PRIORITY APPLN. INFO.: JP 1991-310199 1991 1030

OTHER SOURCE(S): MARPAT 121:22627

GI



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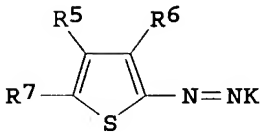
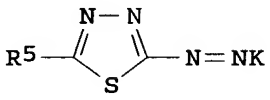


II



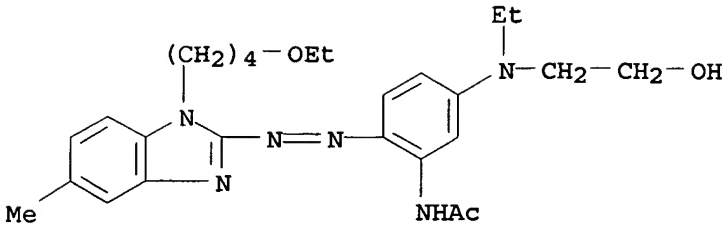
III

AB The title thermal transfer sheet comprises a sheet substrate and a dye layer on 1 side of the substrate, and the magenta dye contained is a mixture of ≥1 anthraquinone dye I [(1) X = S, O, SO2; R3 = (cyclo)alkyl, aryl, allyl; or (2) X = chemical bond; R3 = halo, CN when R1 = NH2, R2 = OH and YR4 = H; (3) X = NH; R3 as defined above; YR4 = H when R1 = R2 = OH; and (4) X, R3 as defined above; Y = X; R4 = R3 when R1 = R2 = NH2], and ≥1 aromatic or aromatic heterocyclic azo dye from eg. II, III [R5-7 = H, halo, NO2, CN, (substituted)amino, (cyclo)alkyl, aryl, allyl, aralkyl, alkoxy, aryloxy, arylthio, alkoxycarbonyl, alkoxyalkyl, alkoxycarbonylalkyl, acylamino, sulfonylamino, ureido, carbamoyl, sulfamoyl, acyl, aromatic heterocyclyl; K = p-dialkylaminophenol, p-dialkylaminopyridino]. Full color images with superior high-d., sharpness, fastness and **photoresistance** can be obtained.

IT **155525-14-7**
(dye, thermal transfer sheet using)

RN 155525-14-7 HCAPLUS

CN Acetamide, N-[2-[[1-(4-ethoxybutyl)-5-methyl-1H-benzimidazol-2-yl]azo]-5-[ethyl(2-hydroxyethyl)amino]phenyl]- (9CI) (CA INDEX NAME)



IC ICM B41M005-38
CC 74-7 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
IT 116-82-5 2478-67-3 6408-72-6 16517-79-6 17418-58-5
20210-72-4 33976-57-7 38919-98-1 68385-96-6 69465-00-5
71009-25-1 79609-68-0 83356-28-9 91576-02-2 107689-09-8
112940-71-3 119308-07-5 120412-48-8 120412-59-1
135198-96-8 148331-78-6 154341-02-3 154341-03-4
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154341-10-3 154341-11-4 154341-12-5 154341-13-6
154341-16-9 154341-17-0 154341-18-1 154341-19-2
155524-20-2 155524-21-3 155524-22-4 155524-23-5
155524-24-6 155524-25-7 155524-26-8 155524-27-9
155524-28-0 155524-29-1 155524-30-4 155524-31-5
155524-32-6 155524-33-7 155524-34-8 155524-35-9
155524-36-0 155524-37-1 155524-38-2 155524-39-3
155524-40-6 155524-41-7 155524-42-8 155524-43-9
155524-44-0 155524-45-1 155524-46-2 155524-47-3
155524-48-4 155524-49-5 155524-50-8 155524-51-9
155524-52-0 155524-53-1 155524-54-2 155524-55-3
155524-56-4 155524-57-5 155524-58-6 155524-59-7
155524-60-0 155524-61-1 155524-62-2 155524-63-3
155524-64-4 155524-65-5 155524-66-6 155524-67-7
155524-68-8 155524-69-9 155524-70-2 155524-71-3
155524-72-4 155524-73-5 155524-74-6 155524-75-7
155524-76-8 155524-77-9 155524-78-0 155524-79-1
155524-80-4 155524-81-5 155524-82-6 155524-83-7
155524-84-8 155524-85-9 155524-86-0 155524-87-1
155524-88-2 155524-89-3 155524-90-6 155524-91-7
155524-92-8 155524-93-9 155524-94-0 155524-95-1
155524-96-2 155524-97-3 155524-98-4 155524-99-5
155525-00-1 155525-01-2 155525-02-3 155525-03-4
155525-04-5 155525-05-6 155525-06-7 155525-07-8
155525-08-9 155525-09-0 155525-10-3 155525-11-4
155525-12-5 155525-13-6 **155525-14-7** 155525-15-8
155525-16-9 155525-17-0 155525-18-1 155525-19-2
155525-20-5 155525-21-6 155525-22-7 155525-23-8
155525-24-9 155525-25-0 155525-26-1 155525-27-2
155525-28-3 155525-29-4 155525-30-7 155525-31-8
155525-32-9 155525-33-0 155525-34-1 155525-35-2
155525-36-3 155525-37-4 155525-38-5 155525-39-6
155525-40-9 155525-41-0
(dye, thermal transfer sheet using)

L24 ANSWER 34 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:148829 HCAPLUS
DOCUMENT NUMBER: 120:148829
TITLE: Silver halide photographic material containing development-inhibitor-releasing coupler

INVENTOR(S): Sanpei, Takeshi
PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 44 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05241264	A2	19930921	JP 1992-39673	19920226
JP 2995360	B2	19991227		

PRIORITY APPLN. INFO.: JP 1992-39673 19920226

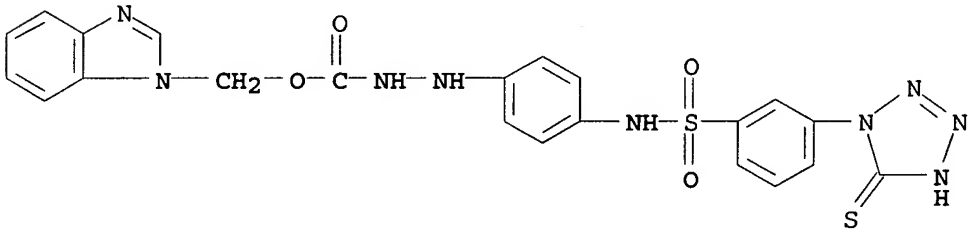
OTHER SOURCE(S): MARPAT 120:148829

AB The material has a hydrophilic colloid layer containing a redox DIR compound and a photog. emulsion layer containing a hydrazine derivative and the total gelatin content at the emulsion side is ≤3.5 g/m2. The material gives sharp gradation image with low black pepper generation.

IT **132773-86-5**
(photog. DIR coupler)

RN 132773-86-5 HCAPLUS

CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-06
ICS G03C001-295; G03C001-34; G03C001-43

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

IT **132773-86-5** 134282-47-6 134282-51-2 152208-74-7
(photog. DIR coupler)

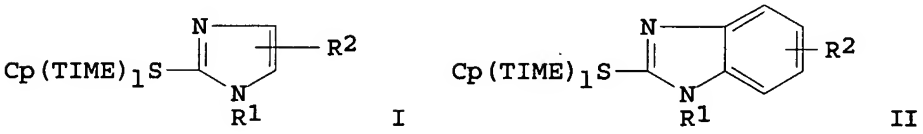
L24 ANSWER 35 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:265487 HCAPLUS
DOCUMENT NUMBER: 116:265487
TITLE: Silver halide photographic material containing development inhibitor-releasing coupler

INVENTOR(S): Sugita, Shuichi; Kida, Shuji
PATENT ASSIGNEE(S): Konica Co., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04044036	A2	19920213	JP 1990-153150	19900612

PRIORITY APPLN. INFO.: JP 1990-153150 19900612

GI

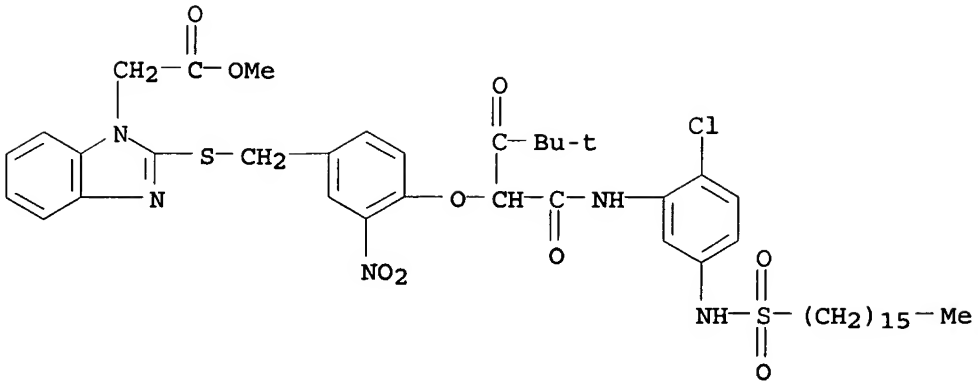


AB The title material contains a coupler represented by general structures I and II (Cp = coupler residue which can undergo a coupling reaction with an oxidized color developing agent; TIME = timing group linked to Cp at the coupling site; l = 0 or 1; R1 = group represented by XY, or substituent other than group represented by XY; R2 = H, R1; ≥1 of R1 and R2 is a group represented by XY; X = linking group; Y = hydrolyzable group). The above-mentioned coupler can release a development inhibitor upon reaction with an oxidized developing agent. The title material provides good sharpness and excellent color reproduction

IT **141720-28-7P**
(preparation of, as photog. development inhibitor-releasing coupler)

RN 141720-28-7 HCAPLUS

CN 1H-Benzimidazole-1-acetic acid, 2-[[[4-[1-[[[2-chloro-5-[(hexadecylsulfonyl)amino]phenyl]amino]carbonyl]-3,3-dimethyl-2-oxobutoxy]-3-nitrophenyl]methyl]thio]-, methyl ester (9CI) (CA INDEX NAME)



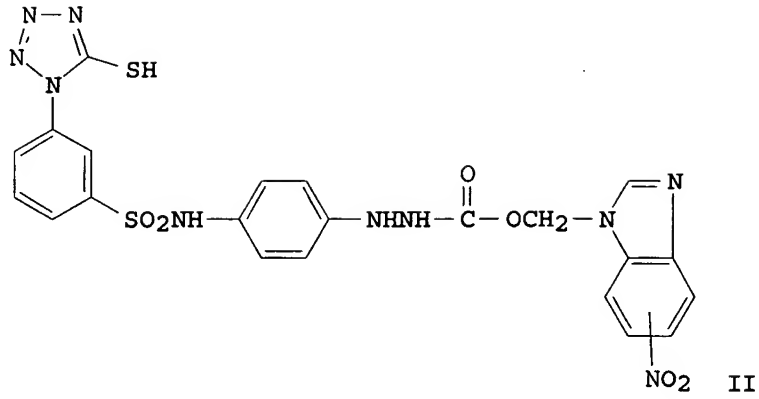
IC ICM G03C007-305
ICS G03C007-32
CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): **41**
IT **141720-28-7P** 141720-29-8P
(preparation of, as photog. development inhibitor-releasing coupler)

L24 ANSWER 36 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:72139 HCAPLUS
DOCUMENT NUMBER: 116:72139
TITLE: Silver halide photographic material
INVENTOR(S): Inoue, Nobuaki; Okamura, Hisashi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 35 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03100646	A2	19910425	JP 1989-239277	19890914

PRIORITY APPLN. INFO.: JP 1989-239277 19890914

GI



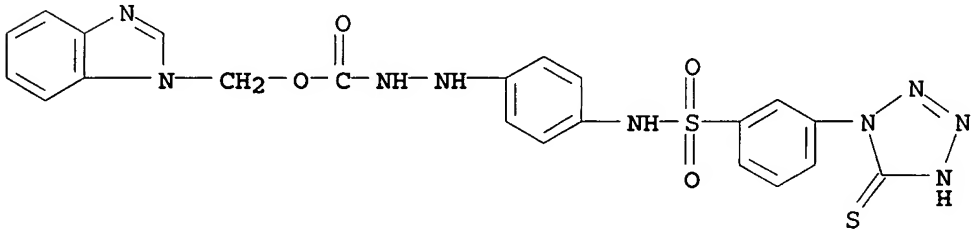
II

AB In the title material comprising ≥2 kinds of monodispersed Ag halide emulsions on a support, the Ag halide emulsions or other hydrophilic colloid layers contain hydrazine derivs. and RYNHLNHNHCO(Time)tPUG (I) [R = an aliphatic group, aryl, heterocyclyl; L = a divalent organic group; Time = a timing group; t = 0 or 1; PUG = a photog. useful group; Y = SO2, Y1P(:O)Y1R; Y1 = O, NH, etc.]. The average size of Ag halide grains in the emulsions is 0.5 μm or less. The title material provides high-quality images. II is an example of I.

IT **132773-86-5**
(photog. emulsion containing)

RN 132773-86-5 HCAPLUS

CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-06

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

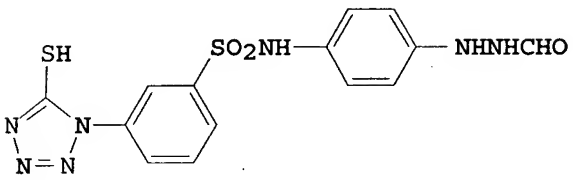
IT 86551-61-3 114750-35-5 **132773-86-5** 134282-55-6 138502-88-2 138502-89-3 138502-90-6 138502-91-7 138502-92-8 138551-67-4
(photog. emulsion containing)

L24 ANSWER 37 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:48775 HCAPLUS
DOCUMENT NUMBER: 116:48775

TITLE: Silver halide photographic material
INVENTOR(S): Inoue, Nobuaki; Inoe, Nobuaki; Okada, Hisashi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 59 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03087733	A2	19910412	JP 1990-45234	19900226
PRIORITY APPLN. INFO.:			JP 1989-144721	A1 19890607

GI



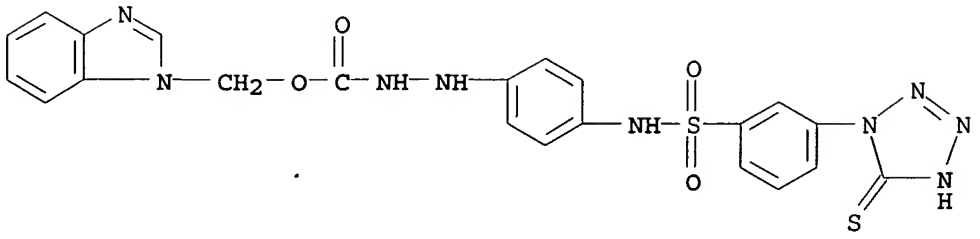
I

AB In the title material comprising one or more photosensitive Ag halide emulsion layers on a support, the emulsion layers or other hydrophilic colloid layers contain one or more hydrazine derivs. and one or more redox compds. which release development inhibitors upon oxidation The photosensitive emulsion layers in the title material consists of monodispersed emulsions. I is an example of the above-mentioned hydrazines. The title material provides high-quality images.

IT **132773-86-5**
(silver halide photog. emulsion containing)

RN 132773-86-5 HCAPLUS

CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-06
CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
IT 86551-61-3 114750-35-5 **132773-86-5** 138499-95-3 138499-96-4
(silver halide photog. emulsion containing)

L24 ANSWER 38 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:22874 HCAPLUS
DOCUMENT NUMBER: 116:22874
TITLE: Dye-donor elements comprising methine or azomethine dyes for use in thermal dye transfer
INVENTOR(S): Vanmaele, Luc Jerome
PATENT ASSIGNEE(S): Agfa-Gevaert N. V., Belg.
SOURCE: Eur. Pat. Appl., 23 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 444327	A1	19910904	EP 1990-200483	19900301
EP 444327	B1	19940921		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 5116806	A	19920526	US 1991-654684	19910213
JP 04216994	A2	19920807	JP 1991-56049	19910226

PRIORITY APPLN. INFO.: EP 1990-200483 A 19900301

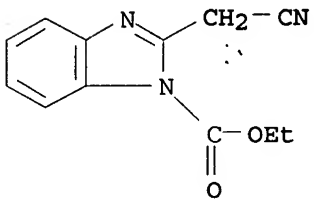
OTHER SOURCE(S): MARPAT 116:22874
GI For diagram(s), see printed CA Issue.
AB Thermal-transfer printing elements consist of supports, binders, and dyes I [ring A is aromatic or heterocyclic, and may be substituted; X = NZ1, NZ2, NN:Z2, CR1R2; Y = O, S, NR3; R1, R2 =

H, (un)substituted alkyl, cycloalkyl, aryl, alkenyl, alkynyl, or heterocyclyl, CN, halogen, SO2R4, COR4, CSR4, POR4R5, or CR1R2 is a ring; R3 = H, (un)substituted alkyl, cycloalkyl, or aryl, SO2R4, COR4, CSR4, POR4R5; R4, R5 = (un)substituted alkyl, cycloalkyl, aryl, alkenyl, aralkyl, alkoxy, aryloxy, alkylthio, arylthio, amino, or heterocyclyl, or PR4R5 is a 5- or 6-membered ring; Z1 = p-substituted aryl; Z2 = (un)substituted heterocyclyl], the synthesis of which is described. Mixing 2-(cyanomethyl)benzimidazole in MeOH with 1.1 equiv p-Et2NC6H4NH2.HCl, adding aqueous NaCO3, treating with iodine in MeOH, and filtering gave I (A is benzo, X = NC6H4NEt2-4, Y = NH) (II), λmax (MeOH) 495 nm. A donor element containing a layer of 50 parts II in 50 parts cellulose acetate butyrate was placed in contact with a receiving element and put through a color video printer to give images with maximum color d. (RD 919 densitometer, status A) 140.

IT **20923-18-6**
(condensation of, with dimethylpyranone)

RN 20923-18-6 HCAPLUS

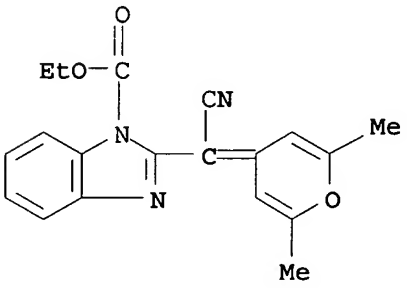
CN 1H-Benzimidazole-1-carboxylic acid, 2-(cyanomethyl)-, ethyl ester (9CI) (CA INDEX NAME)



IT **138073-99-1P 138101-61-8P**
(preparation of, as dye for thermal-transfer printing)

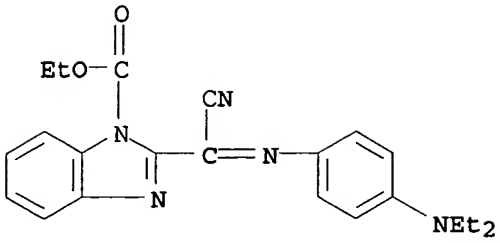
RN 138073-99-1 HCAPLUS

CN 1H-Benzimidazole-1-carboxylic acid, 2-[cyano(2,6-dimethyl-4H-pyran-4-ylidene)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



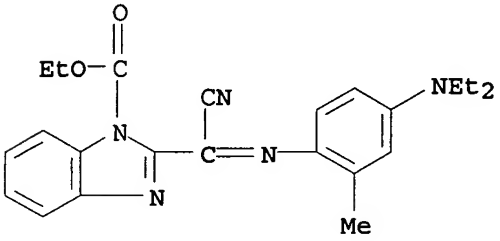
RN 138101-61-8 HCAPLUS

CN 1H-Benzimidazole-1-carboxylic acid, 2-[cyano[[4-(diethylamino)phenyl]imino]methyl]-, ethyl ester (9CI) (CA INDEX NAME)

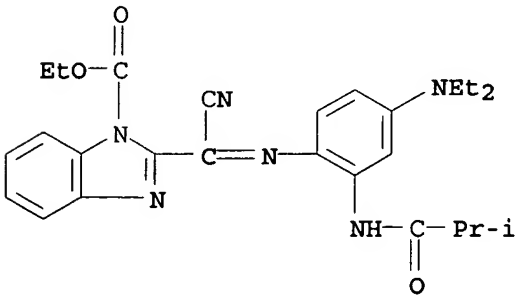


IT **138073-86-6P 138073-95-7P 138073-96-8P 138101-60-7P**
(preparation of, for donor element for three-color transfer printing)

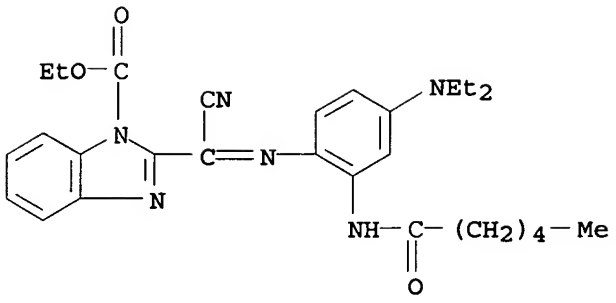
RN 138073-86-6 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, 2-[cyano[[4-(diethylamino)-2-methylphenyl]imino]methyl]-, ethyl ester (9CI) (CA INDEX NAME)



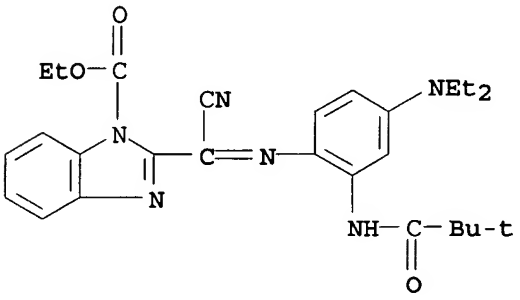
RN 138073-95-7 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, 2-[cyano[[4-(diethylamino)-2-[(2-methyl-1-oxopropyl)amino]phenyl]imino]methyl]-, ethyl ester (9CI) (CA INDEX NAME)



RN 138073-96-8 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, 2-[cyano[[4-(diethylamino)-2-[(1-oxohexyl)amino]phenyl]imino]methyl]-, ethyl ester (9CI) (CA INDEX NAME)



RN 138101-60-7 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, 2-[cyano[[4-(diethylamino)-2-[(2,2-dimethyl-1-oxopropyl)amino]phenyl]imino]methyl]-, ethyl ester (9CI) (CA INDEX NAME)



IC ICM B41M005-38
CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and **Photographic** Sensitizers)
Section cross-reference(s): **74**
IT **20923-18-6**
(condensation of, with dimethylpyranone)
IT 51553-32-3P 57319-74-1P 138073-98-0P **138073-99-1P**
138074-00-7P 138074-05-2P 138074-06-3P 138074-07-4P
138074-09-6P 138074-12-1P 138074-13-2P **138101-61-8P**
138101-62-9P
(preparation of, as dye for thermal-transfer printing)
IT 138073-81-1P 138073-82-2P 138073-83-3P 138073-84-4P
138073-85-5P **138073-86-6P** 138073-87-7P 138073-88-8P
138073-89-9P 138073-90-2P 138073-91-3P 138073-92-4P
138073-93-5P 138073-94-6P **138073-95-7P**
138073-96-8P 138073-97-9P 138101-59-4P
138101-60-7P
(preparation of, for donor element for three-color transfer printing)

L24 ANSWER 39 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:13197 HCAPLUS
DOCUMENT NUMBER: 116:13197
TITLE: Ultrahigh-contrast silver halide photographic materials
INVENTOR(S): Kato, Kazunobu; Okada, Hisashi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02304433	A2	19901218	JP 1989-125385	19890518

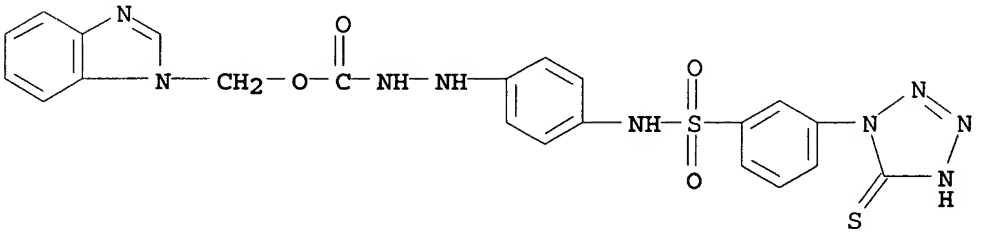
PRIORITY APPLN. INFO.: JP 1989-125385 19890518

AB In the title material having on a support gelatin-containing hydrophilic colloidal layers, the hydrophilic colloidal layers have fine polymer particles containing a hydrazine derivative and the hydrophilic colloidal layers and/or the other hydrophilic colloidal layers contain a redox compound which releases a development inhibitor upon oxidation

IT **132773-86-5**
(ultrahigh-contrast silver halide photog. materials containing)

RN 132773-86-5 HCAPLUS

CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-06
ICS G03C001-04

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

IT 105754-54-9 128811-06-3 **132773-86-5** 136271-71-1
136322-65-1 137757-22-3 137757-23-4
(ultrahigh-contrast silver halide photog. materials containing)

L24 ANSWER 40 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:691047 HCAPLUS
DOCUMENT NUMBER: 115:291047
TITLE: Silver halide photographic material
INVENTOR(S): Goto, Takahiro; Kato, Kazunobu
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.

CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03103843	A2	19910430	JP 1989-242442	19890919
JP 2881221	B2	19990412		
US 5155006	A	19921013	US 1990-584668	19900919

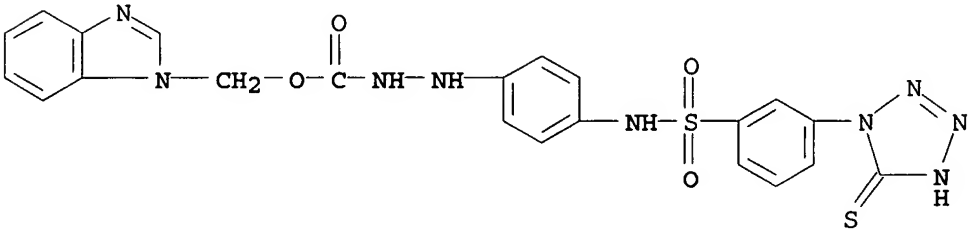
PRIORITY APPLN. INFO.: JP 1989-242442 A 19890919

AB The title material comprises: (a) at least one photosensitive Ag halide emulsion layer containing a hydrazine derivative; (b) a hydrophilic colloid layer (other than the above-mentioned photosensitive layer) containing a redox compound which releases a development inhibitor upon oxidation; and (c) a developing agent in the above-mentioned Ag halide emulsion layer or at least one of the hydrophilic colloid layers. The title material shows high contrast.

IT **132773-86-5**
(photog. material containing)

RN 132773-86-5 HCAPLUS

CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-06

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

IT 92-43-3, 1-Phenyl-3-pyrazolidone 123-31-9, Hydroquinone, uses and miscellaneous 86551-61-3 105754-54-9 **132773-86-5** 133682-17-4 133682-19-6 134282-47-6 134282-53-4 134293-25-7 137811-39-3 137814-39-2
(photog. material containing)

L24 ANSWER 41 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1991:570803 HCAPLUS
DOCUMENT NUMBER: 115:170803
TITLE: High contrast silver halide photographic films
INVENTOR(S): Kato, Kazunobu; Okamura, Hisashi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 39 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02285340	A2	19901122	JP 1989-108216	19890427
US 5187042	A	19930216	US 1990-515882	19900427

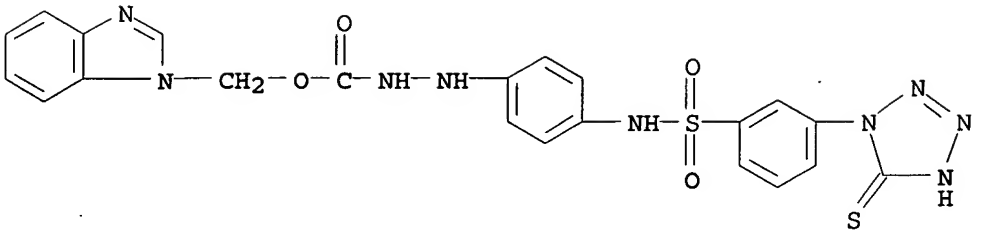
PRIORITY APPLN. INFO.:
JP 1989-108216 A 19890427
JP 1989-109981 A 19890428
JP 1989-113093 A 19890502
JP 1989-129226 A 19890523
JP 1989-144721 A 19890607

AB The title material, suited for use in lith film, comprises ≥1 Ag halide emulsion layer(s) containing hydrazine deriv(s).0 a redox compound releasing a development inhibitor upon oxidation, and a A-B copolymer [A = ethylenic unsatd. monomer having acid group(s); B = unsat. cross linking monomer having ≥2 ethylenic unsatd. groups.

IT **132773-86-5**
(development inhibitor-releasing redox compound, high contrast lith film containing)

RN 132773-86-5 HCAPLUS

CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-04
ICS G03C001-06
CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
IT **132773-86-5** 133682-17-4 133682-18-5 134282-53-4
136271-69-7 136271-70-0 136271-71-1
(development inhibitor-releasing redox compound, high contrast lith film containing)

L24 ANSWER 42 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:482126 HCAPLUS
DOCUMENT NUMBER: 115:82126
TITLE: Silver halide photographic materials
INVENTOR(S): Kato, Kazunobu; Okada, Hisashi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 40 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

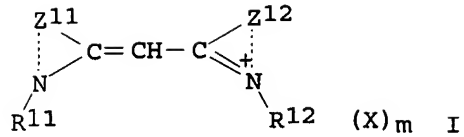
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02287532	A2	19901127	JP 1989-109981	19890428
JP 2889960	B2	19990510		
US 5187042	A	19930216	US 1990-515882	19900427

PRIORITY APPLN. INFO.:
JP 1989-108216 A 19890427
JP 1989-109981 A 19890428
JP 1989-113093 A 19890502
JP 1989-129226 A

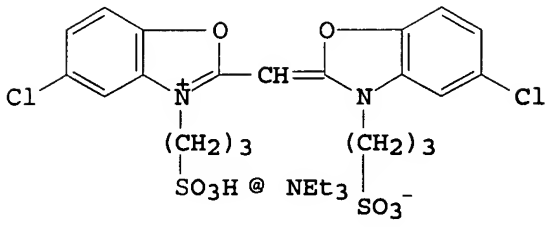
1989
0523

JP 1989-144721 A
1989
0607

GI



I



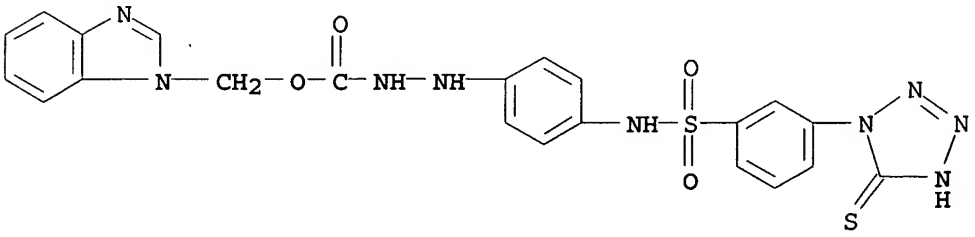
II

AB The title materials comprise: a) one or more photosensitive silver halide emulsion layers containing a hydrazine derivative; b) a redox compound which releases a development inhibitor upon oxidation; and c) a benzoxazole derivative I (Z11, Z12 = non-metallic atoms forming benzoxazole, benzothiazole ring, etc.; R11, R12 = alkyl, aralkyl, at least one of them has an acidic group; X = counter ion; m = 0 or 1). Benzoxazole II is an example of I.

IT **132773-86-5**
(photog. material containing)

RN 132773-86-5 HCAPLUS

CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-06

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

IT 51588-61-5 86551-61-3 90895-26-4 105754-54-9 121216-75-9

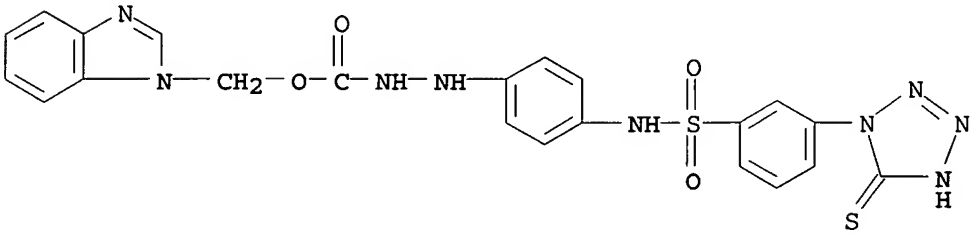
121216-77-1 122558-45-6 127890-98-6 **132773-86-5**
133682-17-4 134282-47-6 134282-48-7 134282-52-3
134282-53-4 134282-54-5 135350-58-2 135350-59-3
135350-60-6 135350-61-7 135377-54-7
(photog. material containing)

L24 ANSWER 43 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:482098 HCAPLUS
DOCUMENT NUMBER: 115:82098
TITLE: Silver halide photographic materials
INVENTOR(S): Katoh, Kazunobu; Yagigara, Morio; Goto, Takahiro
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 79 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 395069	A2	19901031	EP 1990-107991	19900426
EP 395069	A3	19910116		
EP 395069	B1	19960710		
R: DE, GB				
JP 03174143	A2	19910729	JP 1990-91570	19900406
JP 03039952	A2	19910220	JP 1990-93484	19900409
US 5395732	A	19950307	US 1992-893945	19920604
PRIORITY APPLN. INFO.:			JP 1989-108215 A	19890427
			JP 1989-240967 A	19890918
			US 1990-515994 B1	19900427

OTHER SOURCE(S): MARPAT 115:82098
AB A Ag halide photog. material is disclosed, which comprises: (a) ≥1 light-sensitive Ag halide emulsion layer containing a hydrazine derivative; and (b) a hydrophilic colloid layer which is different from the light-sensitive silver halide emulsion layer and contains a redox compound capable of releasing a development inhibitor as a result of oxidation The material has superhigh contrast, and is useful in photomech. processes.
IT **132773-86-5**
(photog. emulsion containing)

RN 132773-86-5 HCAPLUS
CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-10
ICS G03C007-305; G03C001-46; G03C001-76
CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
IT 86551-61-3 105754-54-9 114750-35-5 **132773-86-5**
133682-17-4 133682-18-5 134282-46-5 134282-47-6
134282-48-7 134282-49-8 134282-50-1 134282-51-2
134282-52-3 134282-53-4 134282-54-5 134282-55-6
134293-25-7
(photog. emulsion containing)

L24 ANSWER 44 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:217975 HCAPLUS
DOCUMENT NUMBER: 114:217975
TITLE: Silver halide photographic material containing compound releasing photographically useful group
INVENTOR(S): Okamura, Hisashi; Okada, Hisashi; Yagihara, Morio; Katoh, Kazunobu; Mihayashi, Keiji
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 94 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 393720	A2	19901024	EP 1990-107625	19900423
EP 393720	A3	19920930		
EP 393720	B1	19950823		
R: DE, GB				
JP 03039949	A2	19910220	JP 1989-290563	19891108
JP 2632056	B2	19970716		

US 5134055 A 19920728 US 1990-512221 1990 0420

PRIORITY APPLN. INFO.: JP 1989-102395 A 1989 0421

JP 1989-290563 A 1989 1108

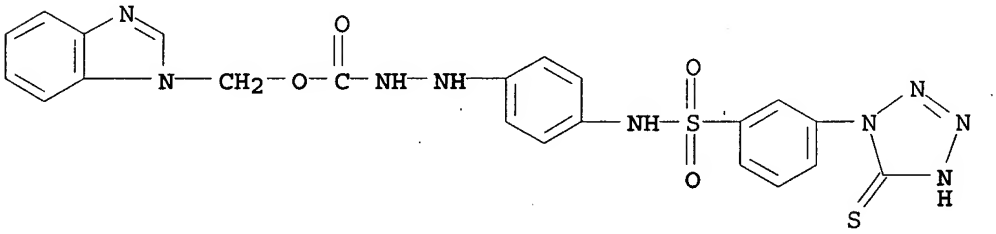
OTHER SOURCE(S): MARPAT 114:217975

AB A Ag halide photog. material contains ≥1 compound represented by the general formula RYNHLNHNHCO(Time)t PUG (R = an aliphatic, aromatic, or heterocyclic group; L, Time = a divalent group; t = 0 or 1; PUG = a photog. useful group; Y = S = Oz, ZSO2, ZPOZR; Z = O, NH, or NR) and optionally ≥1 hydrazine derivative represented by the general formula R1R2NNR3Z1R4 (R1 = an aliphatic or aromatic group; R2, R3 = H, acyl, alkylsulfonyl, or arylsulfonyl with R2 R3 = H; R4 = H, alkyl, aryl, alkoxy, aryloxy, amino, carbamoyl, or oxycarbonyl; Z1 = CO, SO2, SO, COCO, POR4, thiocarbonyl, or iminomethylene). The photog. material thus described has high-resolution and broad exposure latitude in line image-taking work and may excellently reproduce a line original to form an ultrahard image having a gamma value ≥10.

IT **132773-86-5**
(silver halide photog. emulsions containing, for lithog.)

RN 132773-86-5 HCAPLUS

CN Hydrazinecarboxylic acid, 2-[4-[[[3-(2,5-dihydro-5-thioxo-1H-tetrazol-1-yl)phenyl]sulfonyl]amino]phenyl]-, (nitro-1H-benzimidazol-1-yl)methyl ester (9CI) (CA INDEX NAME)



D1—NO_2

IC ICM G03C001-06

ICA G03C008-08; G03C008-40

CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

IT **132773-86-5** 132773-87-6 132773-88-7 132801-46-8
132877-36-2 132877-37-3 132877-38-4 132877-39-5
132877-40-8 132877-41-9 132877-42-0 132877-43-1
132877-44-2 132877-45-3 132877-46-4 132877-47-5
132877-48-6 132877-49-7 133832-21-0
(silver halide photog. emulsions containing, for lithog.)

L24 ANSWER 45 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

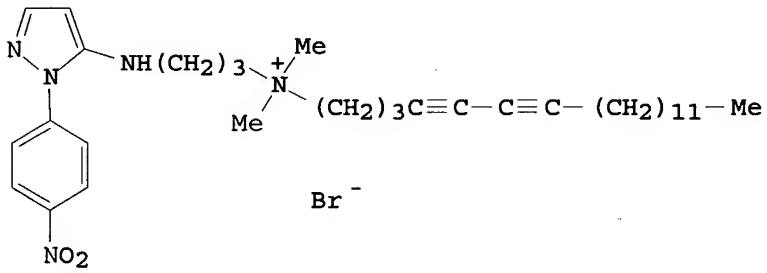
ACCESSION NUMBER: 1989:415474 HCAPLUS

DOCUMENT NUMBER: 111:15474
TITLE: Formation of nonlinear optical patterns
INVENTOR(S): Okazaki, Masaki; Kubodera, Seiichi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63237038	A2	19881003	JP 1987-72183	1987 0326

PRIORITY APPLN. INFO.: JP 1987-72183 1987 0326

GI



I

AB The title patterns are formed on substrates, e.g., in the preparation of optical elements for communication devices, etc., by coating with amphipathic materials, MLA [M = hydrophobic groups containing polymerizable monomer units; L = hydrophilic groups; A = residue of (nitro- and other group-substituted) benzimidazole, imidazole, or indole derivs.], exposing to high energy radiation through a patterned mask, and developing. Compound I, deposited as built-up Langmuir-Blodgett films (400 layer) on a quartz waveguide support, was irradiated with far-UV through a mask, and developed with a 1:4 CHCl3-hexane mixture to prepare a 1-μm nonlinear optical pattern layer.

IT **121092-75-9**
(Langmuir-Blodgett films, radiation-curable, nonlinear optical patterns from)

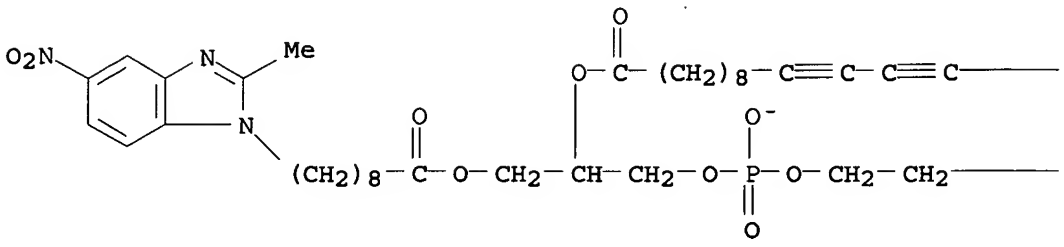
RN 121092-75-9 HCAPLUS

CN 3,5,8-Trioxa-4-phosphanonacosa-18,20-diyn-1-aminium, 4-hydroxy-N,N,N-trimethyl-7-[[[9-(2-methyl-5-nitro-1H-benzimidazol-1-yl)-1-oxononyl]oxy]methyl]-9-oxo-, inner salt, 4-oxide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 121092-74-8
CMF C46 H73 N4 O10 P

PAGE 1-A



PAGE 1-B

— $(CH_2)_7$ — Me

— N^+Me_3

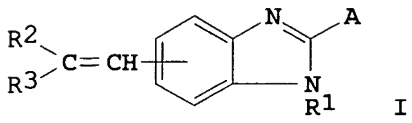
IC ICM G02F001-35
ICS C08F018-12; C08F020-20; C08F020-36; C08F020-38; C08F026-02; C08F030-02; C08F246-00; C08L101-00; G02B006-12
CC 74-13 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 38, 73
IT 121092-61-3 121092-63-5 121092-65-7 121092-67-9
121092-69-1 121092-71-5 121092-73-7 **121092-75-9**
121092-77-1 121092-79-3
(Langmuir-Blodgett films, radiation-curable, nonlinear optical patterns from)

L24 ANSWER 46 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:85382 HCAPLUS
DOCUMENT NUMBER: 110:85382
TITLE: Electrophotographic photoreceptor containing charge-transporting benzimidazole derivative
INVENTOR(S): Shiino, Yasuko; Matsumoto, Masakazu
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63157157	A2	19880630	JP 1986-303856	19861222

PRIORITY APPLN. INFO.: JP 1986-303856
1986
1222

GI



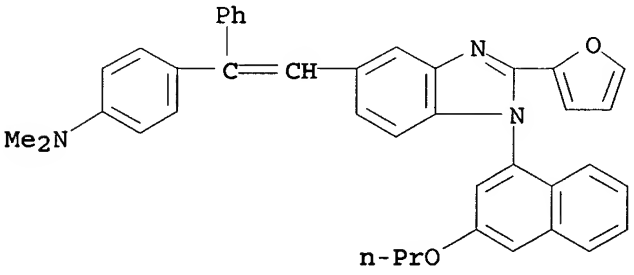
I

AB The title photoreceptor has a photosensitive layer containing a benzimidazole derivative I (R1 = alkyl, aryl, heterocyclyl; R2, R3 = H, R1, aralkyl; R2, R3, and the central C may form a ring residue; A = aralkyl, R1).

IT **119028-30-7**
(electrophotog. charge-transporting agent)

RN 119028-30-7 HCAPLUS

CN Benzenamine, 4-[2-[2-(2-furanyl)-1-(3-propoxy-1-naphthalenyl)-1H-benzimidazol-5-yl]-1-phenylethenyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



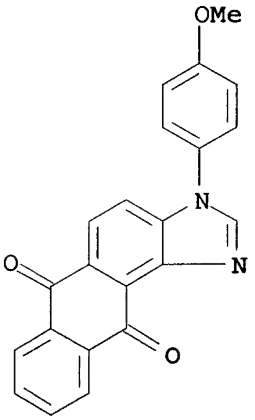
IC ICM G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and **Photographic** and Other Reprographic Processes)

IT 119028-13-6 119028-14-7 119028-26-1 119028-27-2
119028-28-3 119028-29-4 **119028-30-7** 119028-31-8
119028-32-9 119028-33-0 119028-34-1 119028-35-2
119028-36-3 119028-37-4 119028-38-5 119028-39-6
119045-81-7
(electrophotog. charge-transporting agent)

L24 ANSWER 47 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1984:69842 HCAPLUS
DOCUMENT NUMBER: 100:69842
TITLE: Arylamination of aminohalogenoanthraquinones
AUTHOR(S): Philip, George; Nabar, U. T.; Kanetkar, V. R.; Sunthankar, S. V.
CORPORATE SOURCE: Dep. Chem. Technol., Univ. Bombay, Bombay, 400 019, India
SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal

Chemistry (1983), 22B(8), 808-11
CODEN: IJSBDB; ISSN: 0376-4699
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 100:69842
AB 1-Amino-4-(arylamino)anthraquinones were prepared in high yields by reacting 1-amino-4-chloroanthraquinone [2872-47-1] 1, arylamine 6, and anhydrous AlCl3 5 mol in PhNO2 at room temperature 1-Amino-2-bromoanthraquinone, 2-amino-1-chloroanthraquinone, 1-benzamido-4-chloroanthraquinone, and 1-amino-5-chloroanthraquinone failed to give arylaminated products. 1-Amino-2,4-dibromoanthraquinone [81-49-2] gave only 4-arylaminated compds. whereas 1-amino-8-chloroanthraquinone [117-09-9] gave 2-arylaminated derivs. A mechanism for the reaction was suggested. The arylaminated compds were applied on polyester as disperse dyes and their dyeing properties evaluated.
IT **88653-29-6P**
(preparation of)
RN 88653-29-6 HCAPLUS
CN 3H-Anthra[1,2-d]imidazole-6,11-dione, 3-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



CC 41-4 (Dyes, Organic Pigments, Fluorescent Brighteners, and **Photographic** Sensitizers)
Section cross-reference(s): 25
IT 1564-71-2P 60683-36-5P 88653-16-1P 88653-19-4P 88653-20-7P 88653-23-0P 88653-26-3P 88653-28-5P **88653-29-6P**
(preparation of)

L24 ANSWER 48 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1972:571214 HCAPLUS
DOCUMENT NUMBER: 77:171214
TITLE: Stabilized silver halide photographic emulsions
INVENTOR(S): Gauss, Walter; Mueller-Bardoff, Wolfgang; Von Koening, Anita; Moll, Franz; Saleck, Wilhelm
PATENT ASSIGNEE(S): Agfa-Gevaert A.-G.
SOURCE: Ger. Offen., 33 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

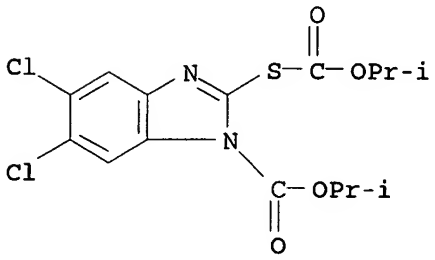
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2042533	A	19720302	DE 1970-2042533	19700827
DE 2042533	B2	19810122		
DE 2042533	C3	19811001		
GB 1340544	A	19731212	GB 1971-38481	19710817
CA 979709	A1	19751216	CA 1971-120711	19710817
BE 771731	A1	19720225	BE 1971-3341	19710825
US 3761278	A	19730925	US 1971-174930	19710825
CH 571233	A	19751231	CH 1971-12536	19710826
FR 2106153	A5	19720428	FR 1971-31203	19710827
FR 2107076	A5	19720505	FR 1971-31204	19710827
JP 55009695	B4	19800311	JP 1971-65241	19710827

PRIORITY APPLN. INFO.:	DE 1970-2042533	A	19700827
	DE 1971-2130031	A	19710618

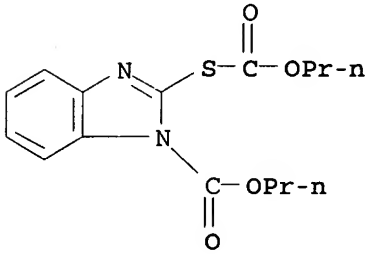
AB Stabilizers whose -SH group is liberated by hydrolysis during development only, and which therefore exert a min. depression on sensitivity and cause formation of smaller Ag grains due to gradual decreasing of the development are composed of heterocyclic compds. (benzimidazoles, imidazoles, purines, pyrimidines, triazoles, tetrazoles, etc.) containing N-C1-6 alkylcarbonyl or N-arylcarbonyl and 2-thio or 2-alkylcarbonylthio substituents. The stabilizer is added at 1-50 mg per mole Ag halide in an organic solvent solution prior to the ripening of the emulsion and, to improve the effect, a tetra-or pentaazaindene is added after the ripening. Thus, after 7 min development of a high-speed AgBr emulsion (with 6% AgI) the fog was reduced from 0.35 to 0.19 by 5 mg 2-ethoxycarbonylthio-1,4,5-triphenylimidazole and to 0.1 if 200 mg of 4-hydroxy-6-methyl-1,3,3a,7-tetrazaindene was also added per kg of emulsion ready to coat.

IT **38586-33-3 38815-64-4 38815-65-5 38815-66-6**
(photog. stabilizer)

RN 38586-33-3 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, 5,6-dichloro-2-[[(1-methylethoxy)carbonyl]thio]-, 1-methylethyl ester (9CI) (CA INDEX NAME)

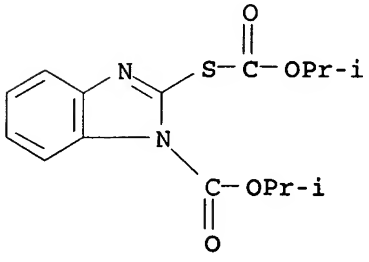


RN 38815-64-4 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, dichloro-2-[(propoxycarbonyl)thio]-, propyl ester (9CI) (CA INDEX NAME)



2 (D1—Cl)

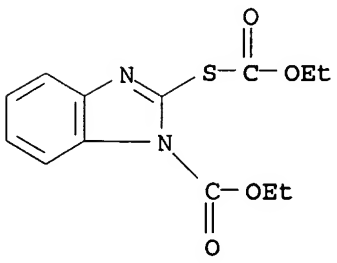
RN 38815-65-5 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, dichloro-2-[[(1-methylethoxy)carbonyl]thio]-, 1-methylethyl ester (9CI) (CA INDEX NAME)



2 (D1—Cl)

RN 38815-66-6 HCAPLUS
CN 1H-Benzimidazole-1-carboxylic acid, dichloro-2-

[(ethoxycarbonyl)thio]-, ethyl ester (9CI) (CA INDEX NAME)



2 (D1—Cl)

IC G03C
CC 74-2 (Radiation Chemistry, Photochemistry, and **Photographic** Processes)
IT 2178-82-7 2178-83-8 2178-86-1 2178-90-7 2178-91-8
2178-92-9 2178-93-0 2178-96-3 2178-97-4 2179-02-4
2179-04-6 2233-08-1 21521-70-0 21521-73-3 38586-25-3
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(photog. stabilizer)